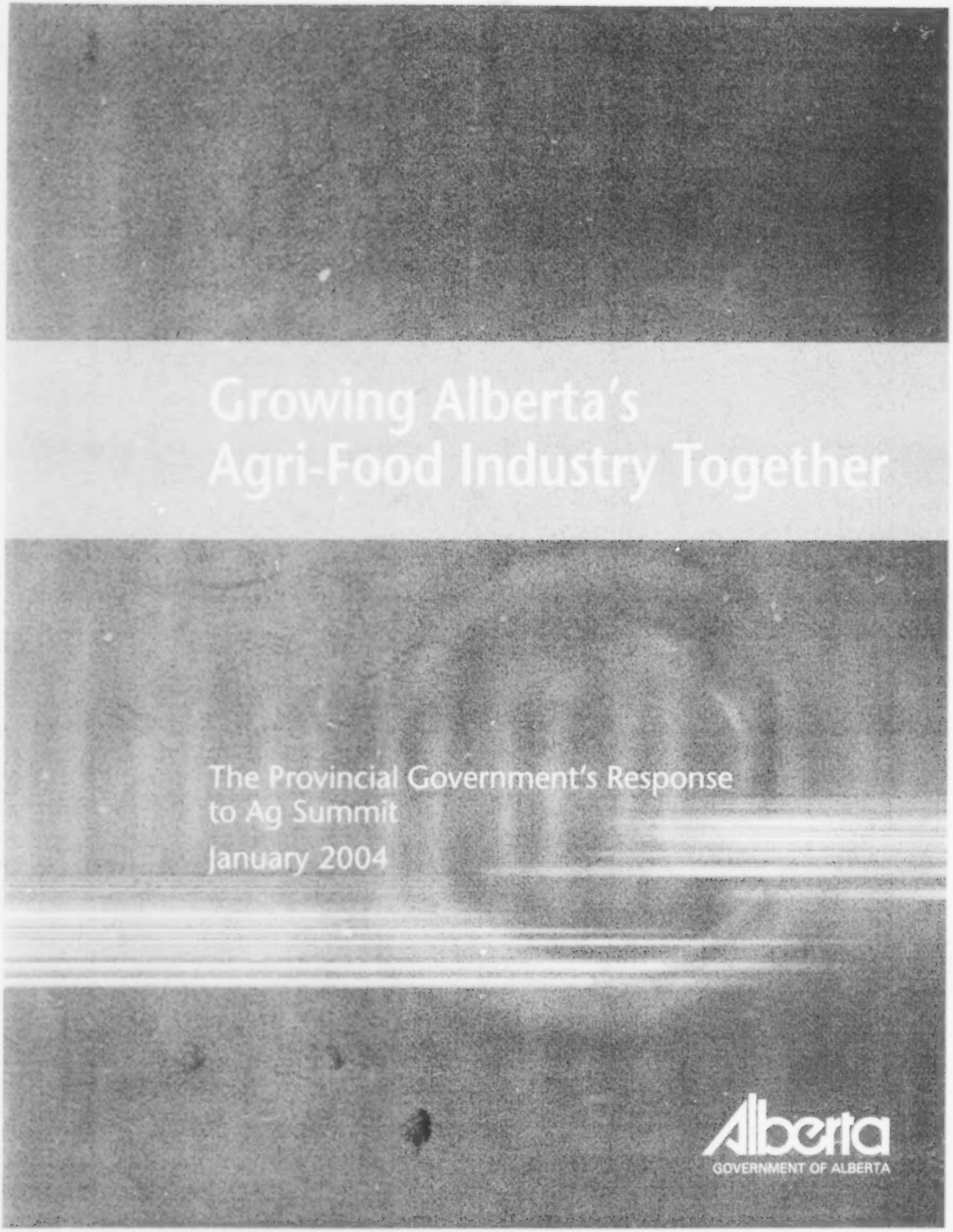


Growing Alberta's Agri-Food Industry Together

The Provincial Government's Response to Ag Summit

January 2004

Alberta

GOVERNMENT OF ALBERTA

106-02852/

Growing Alberta's Agri-Food Industry Together

The Provincial Government's Response to Ag Summit

January 2004

Alberta
GOVERNMENT OF ALBERTA

For additional copies of this publication contact:

Alberta Agriculture, Food and Rural Development
Publications Office
J.G. O'Donoghue Building
7000 – 113 Street
Edmonton, Alberta T6H 5T6

Phone : (780) 427-0391 or
1-800-292-5697 (toll-free in Canada)

or

Visit Alberta Agriculture, Food and Rural Development's
website at: http://www.agric.gov.ab.ca

ISBN 0-7785-3316-6

Printed in Canada
February 2004

Table of Contents

Executive Summary **1**

Introduction **5**

Consolidation of Ag Summit Action Team Recommendations **7**

Business Partnerships **17**
- Ag Summit Recommendations 17
- Yesterday's and Today's Actions 17
- Tomorrow's Actions 21

Financial Tools and Alberta's Agri-Food Industry **23**
- Ag Summit Recommendations 23
- Yesterday and Today's Actions 23
- Tomorrow's Actions 26

Research and Development **29**
- Ag Summit Recommendations 29
- Yesterday's and Today's Actions 29
- Tomorrow's Actions 34

Marketing Choice **35**
- Ag Summit Recommendations 35
- Yesterday's and Today's Actions 35
- Tomorrow's Actions 36

Financial Reforms **37**
- Ag Summit Recommendations 37
- Yesterday's and Today's Actions 37
- Tomorrow's Actions 39

Transportation and Water **45**
- Ag Summit Recommendations 45
- Yesterday's and Today's Actions 45
- Tomorrow's Actions 48

Energy **49**
- Ag Summit Recommendations 49
- Yesterdays' and Today's Actions 49
- Tomorrow's Actions 51

Access to Land **55**
- Ag Summit Recommendations 55
- Yesterday's and Today's Actions 55
- Tomorrow's Actions 57

Human Resources **61**
- Ag Summit Recommendations 61
- Yesterday's and Today's Actions 61
- Tomorrow's Actions 64

Education **67**
- Ag Summit Recommendations 67
- Yesterday's and Today's Actions 67
- Tomorrow's Actions 67

Food Safety **71**
- Ag Summit Recommendations 71
- Yesterday's and Today's Actions 71
- Tomorrow's Actions 72

Sustainability **75**
- Ag Summit Recommendations 75
- Yesterday's and Today's Actions 76
- Tomorrows Actions 77

Animal Welfare **83**
- Ag Summit Recommendations 83
- Yesterday's and Today's Actions 83
- Tomorrow's Actions 84

Government Response to Agrivantage Recommendations **85**
- Agrivantage Recommendations and Responses 85
- Provincial Government Department Business Plans — Exerpts 89

Conclusion **91**

Appendixes
- Appendix A — The Agricultural Policy Framework (Summary) 95
  - Canada-Alberta Implementation Agreement — Exerpts 99
- Appendix B — Alberta's Agri-Food Industry Growth Strategy — August 2003 Draft 107
- Appendix C — Alberta's Agriculture Research and Innovation Strategic Framework 131

List of Acronyms **153**

Executive Summary

Globalization and increased competition are challenging the continued prosperity of Alberta's agri-food industry. Manufactured products and services, rather than commodities, increasingly dominate world trade. As a major agri-food exporter, the Alberta agri-food industry must respond to this changing world market. It must strengthen its ability to add value to production, through research and innovation, and respond to changing consumer demands, through strategic alliances, increased market awareness and the exploration of niche opportunities.

Meeting those challenges demands unprecedented cooperation among governments, industry and individuals. This report outlines provincial government actions to help keep Alberta's agri-food industry competitive in North America and around the world into the 21st century.

The Consultation Process

These actions respond to recommendations that arose from an innovative consultation process initiated at Ag Summit 2000. Members of the public, industry representatives and key government department staff engaged in discussion and collaboration over the following three years. The consultation was the broadest ever undertaken in the industry; the results are wide reaching.

The focus of the Ag Summit process was to support growth of primary agriculture production to $10 billion and value-added agri-food production to $20 billion by 2010. Ag Summit 2000 identified priorities for action, published in *Catalyst for Growth — Framework for Change*. Twelve volunteer Action Teams developed 133 recommendations based on these priorities, detailed in *Collection of Action Team Reports*. In addition, an Agrivantage leadership team, consisting of both government and industry representatives, shaped a further ten recommendations on overarching challenges such as human resources and rural development. Their report, *Building Tomorrow Together*, explains these recommendations.

The Response

Agriculture in Alberta is a foundational industry. It is deeply ingrained in Alberta's history and identity, and forms an important sector in the provincial economy. As a result, the recommendations that emerged from the Ag Summit looked beyond traditional industry concerns.

The government's response to the recommendations reflects this comprehensive approach. Alberta Agriculture, Food and Rural Development, as lead department, grouped the Action Team recommendations into four themes: expanding strategic alliances, addressing challenges to growth, enhancing public confidence and growing rural communities. Within these themes, the department identified 14 areas for response. Interdepartmental teams, consisting of representatives of 16 government departments and agencies, reviewed the recommendations within each area for response and identified relevant ongoing and planned activities. Many of those activities, along with Alberta Agriculture, Food and Rural Development's initiatives to develop key strategies, build partnerships and improve services and programs, also addressed recommendations from Agrivantage.

This cross-government structure allowed an integrated response to emerge. It also created broader awareness across government of various initiatives and how these affect the agri-food industry and Albertans. As a result, this report presents layers of activity which, taken together, promote growth and prosperity in the agriculture sector.

The Government of Alberta's response began immediately upon the release of *Catalyst for Growth — Framework for Change*, with steps such as the restructuring of Alberta Agriculture, Food and Rural Development and identification of priorities for marketing and research. This report outlines government action underway or planned as of May 2003. It is a compilation of reviews conducted by the interdepartmental teams and the response to Agrivantage, and provides a summary of not only agriculture-specific activity, but also broader initiatives important to all Albertans.

Recommendations grouped under the theme growing rural communities are not included. The Rural Development Initiative, a joint effort of Alberta Agriculture, Food and Rural Development and Alberta Economic Development, is addressing these.

Response to the Action Teams

The Ag Summit Action Teams developed recommendations addressing the following priorities:

- Diversification and value added;
- New business strategies;
- Building a new entrepreneurial culture;
- Research, innovation and technology;
- Global market development;
- Future of farm business;
- Public image of agriculture and food industry;
- Sustainable rural communities;
- Food quality and safety; and
- Environmental stewardship.

Key interdepartmental initiatives include:

- Development, under the lead of Alberta Economic Development, of a value-added strategy that targets growing a knowledge economy, adding value to commodities and expanding export services to support growth of a competitive agri-food industry;
- Coordination and facilitation, by Alberta Economic Development and Alberta Innovation and Science, of new networks involving participants in the technology development and commercialization process, including the Bioplastic, Conjugated Linoleic Acid-enriched and Triticale networks;
- AVAC Ltd.'s exploration of the concept of an investor network to provide information to investors on potential opportunities in the agri-food industry;

- Joint implementation by Alberta Agriculture, Food and Rural Development and Alberta Economic Development of strategies to promote investor and skilled worker immigration into agri-food priority areas;
- Inclusion of the needs of the agri-food sector in the Government of Alberta's labour market strategy and action plan, led by Alberta Human Resources and Employment;
- Under the lead of the Alberta Agriculture Research Institute, identification of priorities for funding agriculture research consistent with *Alberta's Agriculture Research and Innovation Strategic Framework*, the Agricultural Policy Framework and the draft *Alberta's Agri-Food Industry Growth Strategy*;
- Development of an *Integrated Life Sciences Strategy for Alberta*, coordinated through Alberta Innovation and Science, that encompasses agriculture and food, health, environment, energy and industrial product research, development and commercialization;
- With leadership from Alberta Economic Development, identification of five priority export markets for agriculture products: the United States, Japan, Mexico, South Korea and China;
- Alberta Transportation's continual improvement of transportation efficiencies for commodities and processed agricultural products;
- Lobbying by International and Intergovernmental Relations for movement of the Canadian Wheat Board's transportation responsibilities to "spout at port" location and reduction of the Board's involvement in inland grain transportation and handling;
- Alberta Learning's enhancement of agriculture and food information in the kindergarten to grade nine Social Studies curriculum, and plans for expansion of agriculture and food information into other curriculum areas;
- The Government of Alberta's commitment to a three-year Capital Plan that provides $1.5 billion for highway infrastructure, $893 million for municipal transportation grants and $262 million for water and wastewater management; and
- Establishment of common, science-based Meat Facility Standards for all facilities under the jurisdiction of Alberta Health and Wellness or Alberta Agriculture, Food and Rural Development.

Response to Agrivantage

The Agrivantage team looked beyond specific priorities towards actions to create an environment that supports industry growth. Their recommendations touched on: overall policy development and coordination; human resources, management and leadership; research and development; and rural renewal.

Government initiatives that respond to the recommendations include:

- Signing of the Agricultural Policy Framework, a five-year federal-provincial agreement that funds initiatives in business risk management, environment, food safety and quality, renewal and science and innovation;
- Development of the draft *Alberta's Agri-Food Industry Growth Strategy* and identification of five key industry sectors with significant opportunities for growth;
- Partnering of the Alberta Environmentally Sustainable Agriculture Council and the Agriculture and Food Council to assess opportunities for growth in new non-food agricultural products called Environmental Goods and Services;
- Release of *Alberta's Agriculture Research and Innovation Strategic Framework*, which sets goals, aligns research with growth opportunities and points out gaps in research capacity that need to be filled;
- Locating of the Agrivalue Processing Incubator and the Centre for Agri-Industrial Technology with the Leduc Food Processing Development Centre, to create a cluster of expertise to support development and commercialization of new products and processes, enhancement of management skills among entrepreneurs and attraction of new investment;
- Creation of the Institute for Food, Agri-Industrial and Agricultural Sciences Alberta, a centre for basic and applied research, commercialization and learning that will attract graduate students and technicians and support new company formation;
- Establishment of the Rural Development Initiative as a priority cross-ministry initiative, to raise the profile of rural activities and promote rural-friendly policies, programs and services; and
- Formation of the Alberta Livestock Protection System, involving government, the Alberta Farm Animal Care Association and the Alberta Society for the Prevention of Cruelty to Animals, to provide leadership on animal welfare issues and coordinate livestock protection activities.

New Government Service Areas

Alberta Agriculture, Food and Rural Development created two new divisions in 2001/02 to provide support for value-added activity by Alberta's producers, processors and marketers. The Ag-Entrepreneurship Division shares leadership with industry, academia and government to:

- Build human capacity to capture agri-entrepreneurial opportunities;
- Identify and channel resources to jump-start innovation,
- Expand the capacity of existing agri-entrepreneurs;
- Cultivate networks; and
- Remove barriers to innovation and growth.

The Business and Innovation Division works with producers, agri-processors and industry associations to assist clients in identifying and capturing market opportunities and facilitate industry links and partnerships.

Future Actions

The response to the Ag Summit will continue to evolve along with the agri-food industry in Alberta. The many actions already underway and outlined in this report will be augmented by others that result from significant provincial and federal strategies, including *Water for Life: Alberta's Strategy for Sustainability, the Life Sciences Strategy*, the value-added strategy and *Alberta's Agri-Food Industry Growth Strategy*.

The new five-year national Agricultural Policy Framework addresses Ag Summit recommendations related to food safety, renewal, business risk management and research. The implementation agreements included in the Framework will spur work on action plans to help strengthen businesses, increase prosperity, encourage diversification and value-added activities and improve responsiveness to consumers at home and abroad. These plans will be monitored, measured and adjusted as needed.

Success in building a prosperous, competitive agri-food industry depends on industry participation and leadership. Many of the recommendations from the Ag Summit stressed that leadership must come from industry. The government's role is to work with producers, processors and marketers to ensure appropriate policies and programs are in place to allow them to capitalize on growth opportunities. This report outlines the steps the government has already taken. It also signals the government's continued commitment to work with industry and Albertans to grow and diversify agriculture in Alberta.

Introduction

Alberta is the second largest agricultural producer in Canada. In 2002, the province generated 23 per cent of national farm cash receipts, and primary agriculture and food and beverage manufacturing employed almost 90,000 Albertans.

However, in recent years, prospects for growth in the agriculture and food industry using traditional commodity-based approaches have decreased. The industry, like other sectors of Alberta's economy, must become more market-driven, knowledge-intensive and focused on value-added activity to stay prosperous and globally competitive. To better understand the challenges facing the industry, and to formulate a comprehensive strategy for the future, the Government of Alberta and the Agriculture and Food Council initiated the Ag Summit process in February 2000.

The vision of the Ag Summit was to create a collaborative, positive business climate that supports the continued growth of a profitable, environmentally sustainable agriculture and food industry in Alberta. A measure of growth would be primary production of $10 billion and value-added agri-food activity of $20 billion by 2010.

The Ag Summit used the successful approach of previous government consultations, including *Creating Tomorrow* (1992), *Getting Down to Business* (1995) and the *Growth Summit* (1997). Over a period of three years, thousands of Albertans from all parts of the province participated. An initial round of focus groups and meetings identified ten priority clusters of challenges and opportunities. Volunteer Action Teams were then formed to examine these clusters and make recommendations to help industry and government address challenges and capitalize on opportunities. The following table shows the priority clusters and resulting Action Teams.

Priority Cluster	**Action Team**
Diversification and Value Added	Alberta Farmers have Marketing Choice Action Team
New Business Strategies	Long-Term Farm Profitability & Sustainability Action Team Attract Equity Financing to Primary Agriculture and Agri-Industry Action Team
Building a New Entrepreneurial Culture	Alberta Centre of Entrepreneurial Excellence Action Team (ACE)
Research, Innovation and Technology	Innovation Strategy for Crop & Livestock Opportunities Action Team
Global Market Development	Competitiveness in a Global Marketplace Action Team
Future of Farm Business	Action Team on Taxation (ATOT)
Public Image of Agriculture and Food Industry	Image and Importance of Agriculture Action Team (IIAAT)
Sustainable Rural Communities	Infrastructure in Rural Communities Action Team
Food Quality and Safety	Supply Chain Food Safety Action Team
Environmental Stewardship	Environmental Stewardship Action Team (ESAT) Land Use Core Action Team (LUCAT)

A leadership team, called Agrivantage, was established to coordinate the work of the Action Teams and identify and make strategic recommendations on overarching issues. Agrivantage included representatives of Alberta Agriculture, Food and Rural Development, Alberta Innovation and Science, Alberta Economic Development, Agriculture and Agri Food Canada, the Agriculture and Food Council and industry-at-large.

These consultations produced three reports:

- *Catalyst for Growth, Framework for Change* outlined key findings and a vision produced by the first set of public consultations;
- *Collection of Action Team Reports* listed the 133 recommendations of the Action Teams; and
- *Building Tomorrow Together* provided Agrivantage's views and recommendations on overarching challenges.

Because agriculture is an integral part of Alberta's social and environmental make-up, Agrivantage and the Action Team recommendations went beyond the historic realm of agriculture. For example, recommendations include suggestions to achieve strong, integrated support in research and development, technology and training and knowledge transfer. They also support investments that will lead to healthy citizens, a strong economy and a clean environment.

Activity in response to the Ag Summit began upon release of the first report, *Catalyst for Growth, Framework for Change*. To ensure comprehensive and coordinated government action, Alberta Agriculture Food and Rural Development grouped the Action Team recommendations into four key themes and fourteen areas for response, as shown below:

Theme	**Areas for Response**
Expanding Strategic Alliances	Business Partnerships Financial Tools Research and Development
Addressing Challenges to Growth	Market Choice Financial Reforms Transportation and Water Energy Access to Land Human Resources
Enhancing the Public's Confidence	Education Food Safety Sustainability Animal Welfare
Growing Rural Communities	Development and Diversification

Teams consisting of representatives of government departments or agencies with an interest in the particular Area for Response identified any ongoing, planned and proposed activities and policies that responded to the related recommendations. The ministries and agencies that participated included: Agriculture, Food and Rural Development, Economic Development, Environment, Finance, Health and Wellness, Human Resources and Employment, Energy, Infrastructure, International and Intergovernmental Relations, Innovation and Science, Learning, Municipal Affairs, Revenue, Transportation, Sustainable Resource Development and the Agriculture Financial Services Corporation.

The interdepartmental teams also identified initiatives that addressed Agrivantage recommendations. Combined with Alberta Agriculture, Food and Rural Development's work to develop key strategies, build critical partnerships and networks and realign support programs and services, these initiatives form a government-wide response to overarching challenges. The focus of that response is supporting the growth of innovation and value-added production in the agri-food industry.

This report outlines the Government of Alberta's actions, and includes existing programs, changes to those programs and new and planned initiatives incorporated into government's 2003/04-2006/07 business plans as of May 2003. It consists of fourteen separate reports: the reviews of the interdepartmental teams, which group actions into the categories "Yesterday's and Today's Actions" and "Tomorrow's Actions," plus the response to Agrivantage.

This response report does not address the recommendations grouped under the Growing Rural Communities cluster. The Rural Development Initiative, a joint activity of Alberta Agriculture, Food and Rural Development and Alberta Economic Development, is responding to these. Nor does it include industry response, which will follow the Agriculture and Food Council's industry-wide consultation process initiated in the fall of 2003.

Consolidation of Ag Summit Action Team Recommendations

Twelve Ag Summit Action Teams submitted 133 recommendations to government and industry. Some duplication and similarities existed within these. To enable a more consolidated response, the recommendations are grouped as follows:

Themes	Areas for Response
Expanding Strategic Alliances	Business Partnerships Financial Tools Research and Development
Addressing Challenges to Growth	Market Choice Financial Reforms Transportation and Water Energy Access to Land Human Resources
Enhancing the Public's Confidence	Education Food Safety Sustainability Animal Welfare
Growing Rural Communities	Development and Diversification

(The recommendations under the last theme were referred to the joint Alberta Agriculture,Food and Rural Development — Alberta Economic Development, Rural Development Initiative (RDI) for consideration as part of that broad initiative.)

Note: This summary does not include the Agrivantage recommendations. They are in the "Government Response to Agrivantage Recommendations" section starting on page 85.

Theme: Expanding Strategic Alliances

Business Partnerships

Recommendations
There is a need for an entity to be created and/or charged to act as a conduit for information, communication of best practices, to identify gaps and needs as well as replication, to coordinate the interaction and collaboration between industry, academia and government in order to build an entrepreneurial culture and facilitate services to existing exporters and entrepreneurs. a) Continue efforts to build and maintain effective, collaborative, focused networks that include all participants throughout the technology development and commercialization process. b) Develop Centres of Excellence for agriculture. c) Encourage clusters among similar agriculture and agri-food operations or businesses to improve economies of scale in specific areas such as marketing, management and human resources and use of professional services. d) That the concept of value chains should be further developed and promoted to create stronger links in key export markets. e) Transportation chains, similar to the concept of value chains, between producers, processors, retailers and wholesale purchasers should be pursued. This could reduce costs, improve efficiency and enhance Alberta's ability to reach markets.
That Alberta Economic Development Trade Team, in conjunction with the Market and Industry Services Branch of Agriculture and Agri-Food Canada adopt the District Export Council's model (attached as Appendix "G" of the ACE report) for industry support of extension resources to enhance effectiveness and credibility or support services for exporters within the province. a) That we (Competitiveness in a Global Market Action Team) support the recommendations of the Agriculture Centres for Excellence (ACE) team. Specifically we recommend the following: • The establishment of "Export Councils" within Alberta to assist exporters and potential exporters to access information, skills and knowledge. A model of "District Export Councils" exists in the United States. • The creation of export knowledge chains or a network of people who represent export excellence and make them available to Alberta agri-food exporters. (see the ACE report)
That the provincial government, in collaboration with industry, identify and benchmark the top five products and services and the top five exports markets that we should be globally competitive in. Then, that we seek to drive forward our natural advantages in those products and markets by focusing on strengths and improving performance in the area of weaknesses and forecast opportunities a) That government departments and agencies continue to tailor their efforts towards sourcing and disseminating specific information about business opportunities in key export markets. b) Working with international networks like the Pacific Northwest Economic Region
That money be made available for AAFRD or industry groups to gain a "back seat" at international trade negotiations (behind the federal government) similar to what the Quebec government has now. a) We (Competitiveness in a Global Market Action Team) need a trade group (similar to the former AITC) to unite Alberta producers that has a "war chest" to represent the Alberta point of view. This should be an industry driven group with government support. It could be supported by voluntary industry checkoff funds.
Establish accurate and updated benchmarks to evaluate and measure progress towards crop and livestock diversification in the context of the $20 billion value added production target.

Financial Tools

Recommendations
Create and package agri-investment vehicles such as Managed Investment Pools, Private Investor Networks,and Innovative Corporate Structures such as New-Generation Co-ops, and/or Limited Partnerships. a) Encourage clustering to create financial instruments that are of interest to investors such as those that diversify and manage risk e.g. Managed Inve .tment Pools. b) Innovative financing tools and methods should be investigated and developed for intergenerational farm transfers c) Acceptance by the Alberta Government of Labor Sponsored Venture Capital Corporation legislation. d) That the provincial government reinstate the Community Bond Program or other programs as recommended by the "Attract Equity" Action Team. They could then be used to attract equity for "private" ownership of branchlines and sidings e) Significantly increase education and awareness among industry and growth capital provider stakeholders via development of a continuing series of workshops or on-going symposiums; by communicating success stories; and by maintaining the existing websites that increases coordination and linkages between stakeholders f) Support and coordinate complementary initiatives delivered by government, research institutions, universities, and private sector organizations that work to increase capital availability to entrepreneurs within the agriculture and agri-food industry.

Research and Development

Recommendations
Identify key research/technology areas that will create and maintain a competitive advantage for Alberta in the food or non-food crop and livestock industries. a) Ensure that the policy and regulatory framework supports crop and livestock diversification.
Develop and implement a technology transfer system for new food and non-food crop and livestock opportunities in order to communicate and demonstrate industry production, market development and business approaches.
Direct research dollars towards the development of food safety practices and provide the science to encourage the countries we export to, to only request food safety expectations that are based in science. Redirect money from *Alberta Agriculture Research Institute* and *Alberta Environmentally Sustainable Agriculture Program* towards food safety research, and determine priorities at workshops and commodity-aligned meetings.

Market Choice

New Recommendations
The province of Alberta insist that the federal government make legislative changes immediately to make the Canadian Wheat Board a voluntary marketing agency in Alberta. a) The province of Alberta should continue to advocate for moving Canadian Wheat Board transportation responsibilities to spout at port location. b) That barriers to expansion of the processing and export of value added cereal products in Alberta must be removed. This team believes that the CWB control over the pricing, delivery and export permit process restricts this growth. Thus we recommend that these barriers be removed. c) As a first step that the concept of free trade in all grains be advanced for consideration. This means that producers should have the choice to sell their grains through the CWB of market them on their own
In the event that the recommendation to make the Canadian Wheat Board a voluntary marketing agency is not achieved immediately, the province of Alberta should implement an offset program or a "Made in Alberta Solution" to counter federal policy. a) If the concept of marketing choice is not endorsed across the prairies, then this team (Competitiveness in a Global Market Action Team) recommends that Alberta set up a pilot program that essentially removes the impact of CWB jurisdiction from domestic markets (in Alberta) or offsets the negative effects of CWB control over domestic and export marketing of grain in the province.

Financial Reforms

Recommendations
Property and Education Taxes a) Immediately reduce the non-residential education property tax rate from $9.94 to $6.77 per $1000 of equalized assessment to equalize with residential property b) Ensure any reduction or phase-out of the education property tax for residential property is applied equally to non-residential property. c) Pursue revenue-sharing options with municipalities to assist in reducing municipal property and business tax levels. d) Remove education tax from property tax.
Corporate Taxes a) Remain committed to reducing the small business corporate rate to 4 percent and 3 percent by April 1, 2002 and 2004 respectively b) As part of an ongoing strategy, lower the small business rate by half a point each year (2004-2009) so that the rate falls to zero by 2010. c) Remain committed to lowering the general business rate to 8 percent by April 1, 2004 d) As part of an ongoing business strategy, increase the small business corporate tax threshold to $ 00,000 by April 1, 2006 e) Increase the maximum eligible small business deduction limit.
Personal Income Tax a) Provide ongoing reduction beyond the 10 percent single rate to ensure all income levels pay less than other provincial jurisdictions. b) Conduct annual reviews of the rate and exemption thresholds due to the fact that despite the progress made, many middle income earners pay more personal income tax in Alberta than in Ontario.
Fuel Taxes a) While the Alberta government doesn't administer PST, the provincial government must pressure the federal government to, at a minimum, reduce federal fuel taxes by half to 5 cents/litre on unleaded and 2 cents/litre on diesel.
Tax Changes to Promote a more attractive Investment climate in the Agriculture and Food Industry a) Enhance rollover provisions for farmland to allow for rollover to eligible agri-businesses. b) Allow for inclusion of owner-controlled agri-businesses in RRSPs. c) Make agri-investment vehicles comparable in treatment to that of other industries as related to flow through provisions of tax legislation and regulations.
Risk Management Design Criteria for Agricultural Programs Government Program and Regulation design has to: • Be voluntary and provide flexibility. • Have balance to ensure that the environment is not put at risk, nor agriculture is put at risk by environmental initiatives. • Enhance market responsiveness (i.e. programs/regulations are market driven). • Recognize regional diversity. • Be based on profit margin (best economic return should become the focus). • Help farmers cope with weather uncertainty. For crop insurance to be more effective changes have to be made (e.g. market driven, individualized, micro managed and more options) • Help farmers cope with price and income uncertainty outside the predictable range. • Encourage farmer attention to focus on financial and marketing management. • Be whole farm in scope and be tailored to the individual farm (micro). • Encourage Financial Institutions to invest in agriculture

Theme: Addressing Challenges to Growth

Transportation and Water

Recommendations
Roads • Urge federal government to reinvest fuel taxes on roads. • Urge municipal cooperation to develop province-wide market-grid system. • Get government to re-evaluate funding formulas — all government allocations.
Water — Protect Quality and Keep Cost Reasonable a) Water/Sewer — Standards • Urge local, provincial, and federal governments to work together to ensure appropriate standards and regulations exist and are communicated. • Involve the public. b) Water Supply • Re-assess funding formulas; include federal, provincial, and local governments and the individual in the development of a new formula. • Increase funding for water control and delivery. • Assess future water needs in the province.
That the provincial government undertake a study to determine the economic impact analysis of opening access to railbeds that would encompass all commodities (not just agricultural ones). Also, that the results of the study be made available by Dec 31, 2002 to the Alberta government and other provincial governments that have chosen to join the study.
This Action Team recommends that an overall provincial transportation secretariat be formed, along the lines of what existed prior to 1990, where transportation issues were researched, analyzed and where all transportation policy issues for the province were developed and put forward for further consideration. The intent of the secretariat is to work with industry, associations, and other groups to ensure that a low cost, competitive transportation system exists within the province to assist industry in accessing national and international markets.
That the Alberta government lobby the federal government and the Prince Rupert Port Authority to invest sufficient funds to upgrade the Fairview Terminal Agport at Prince Rupert so it could handle specialty crops, other grains and oilseeds that need to have their identities preserved

Energy

Recommendations
Utilities — Stable Supply at Reasonable Cost a) Action should be taken to control electricity cost by developing and/or expanding co-generation of electricity from the manure of CFO's (Confined Feeding Operations) and other sources of agricultural biomass that could be converted to electricity as well as other alternative sources such as wind and solar power generation. All these should be promoted and encouraged through tax or other incentives. b) Rural Utility Systems • Monitor prices on an ongoing basis. c) Windfall revenues generated from increased prices in energy should be used (in part) to support an increased supply of unregulated power sources. d) Consider initiatives to encourage retailers to provide electricity products to Small & Medium Enterprises (SME's) on managing their electricity needs. e) Consider future options to ensure that Alberta business remains competitive within a North American marketplace once current (utility) rebates and credits expire.

Retaining Access to Land

Recommendations
It is recommended that the province and municipalities, both urban and rural, form partnerships with all industry sectors and public, regarding the development of a long term sustainable land use policy and regulation framework.
It is recommended that the Province of Alberta adopt a more rigorous approach to protecting agricultural lands by developing a province-wide framework of land use policies that are enforceable and based on input from Albertans. a) It is recommended that local governments; their decision makers and planners, both urban and rural, be provided with the technical support, resources, and tools such as AIMFAR (Alberta's Information Management Framework for Agricultural Regions) to protect agricultural working lands.
It is recommended that the provincial government designate sufficient human resources and funding to investigate fiscal incentives and conservation programs to retain sustainable agricultural landscapes for future use and the benefit of Alberta's citizens.
Implementation Recommendation
It is recommended, that interested members of LUCAT continue, in the interim to promote LUCAT results and initiatives through communication, strategic planning and developing linkages with industry and government.

Human Resources

Recommendations
Train, educate, recruit, and retain the people needed to support an entrepreneurial approach to the agriculture/life sciences industry. a) Use distance learning for agriculture education. b) To facilitate a forum for identifying agricultural education programs offered in Alberta, both formally and informally, with a goal of creating a "map" of opportunities available. The forum could be facilitated by one of the potential partnering organizations. c) Alberta's educational institutions, agencies and departments will continue to offer the excellent agriculture programs already available. It is recommended that a process be developed and funded to convene stakeholders (institutions, agencies, producers, elders, etc.) to co-ordinate and share information about programs available and identify duplication and/or gaps. Special emphasis should be put on program/courses that deal with intergenerational farm transfer issues. A goal of developing delivery mechanisms that provide local access for producers would be desirable d) Local co-ordinating groups/individuals in rural areas have a solid understanding of the local people, partners and opportunities. It is recommended that local structures be identified to be a clearinghouse, connection and voice of the community with respect to learning e) Industry and government need to develop a human resource strategy for agriculture in Alberta. To actively promote agriculture as a viable career choice by developing promotional tools for industry and support the creation of an Agriculture Workforce Policy Board or similar concept to provide longer term strategic direction for development of a human resource strategy. f) That federal and provincial agencies such as Human Resources Development Canada (HRDC) and Alberta Human Resources and Employment (AHR&E), along with pertinent Alberta Learning departments, work with industry to develop work strategy programs, career fairs and promotional materials reflecting agricultural work/ownership opportunities. Youth interested in agriculture can then use these materials to aid in their work/career decision making. g) To further develop the Green Certificate Program to meet the needs of the industry and provide awareness of the program. It is recommended that a 'bridge' program be established between no experience and the green certificate program (e.g. Farming 101). h) It has also been identified that industry may be a willing partner in the task to remove barriers for people such as transportation to sites. As well, promotion of the Green Certificate program and the value it has to potential employers will be important to the success of potential employees seeking work/careers. i) The goal of AAFRD should be to continue to provide basic production, financial and marketing information for the development and optimization of primary producers through courses and one-on-one consultation.

Education

Recommendations
Agricultural Content in the Schools (K-12) Curriculum. IIAAT (Image and Importance of Agriculture Action Team) strongly encourages Growing Alberta and Alberta Learning to continue their partnership and dialogue to facilitate incorporation of agriculture content and programming in the school curriculum in Alberta. IIAAT encourages efforts that work towards increased collaboration and cooperation between provincial government departments as this is critical to maintaining the effective industry-government relationship that is necessary to move forward with incorporating agriculture content into school curriculum.
Better Public Awareness and Education about the Agricultural Industry a) IIAAT recommends that Growing Alberta continue to take the lead in promoting the value of the agriculture and food industry to the province by communicating a consistent message both within and outside the agriculture community. b) In addition to continuing to give priority to public-industry communications through the use of its magazine, Speakers Bureau and website, IIAAT would like to see Growing Alberta increase its focus on intra-industry communications using these same media. c) Growing Alberta, as an established entity with the mandate and the tools to provide the outcome of speaking with "one-voice" on food safety and quality issues should continue to communicate consistent messages on behalf of the entire agriculture industry. d) In an effort to improve rural/urban communications, IIAAT supports Growing Alberta in their endeavours to liase with the Alberta Association of Municipal Districts & Counties (AAMDC) and the Alberta Urban Municipalities Association (AUMA) through its Speakers Bureau. e) IIAAT feels that Growing Alberta should continue to promote success stories in rural communities. f) Growing Alberta should be the "one-voice" vehicle to disseminate information regarding environmental sustainability programs already provided and for programs that will be developed in the future. g) IIAAT would like to see the Agriculture Education Network be more active and proactive in enhancing and improving two-way communications between the public and industry. h) IIAAT supports the endeavours of programs already in place to improve urban/rural communications and strongly encourages Agricultural Societies to take on an expanded role in program delivery in this area.
This team (Long-term Farm Profitability and Sustainability Action Team) supports the Image and Importance of Agriculture Action Team in principle. This team would like to see the following points emphasized in an overall consumer education initiative: Present agriculture as an industry that requires skilled people (owners, managers, supervisors and technicians) rather than minimally educated and unskilled. Provide information about production costs and actual profit margins to consumers. Growing Alberta should educate producers and consumers about issues related to food safety, quality, economics of production and the environment The "consumer education initiative" should include food safety, quality, and economics of production and environmental matters

Food Safety

Recommendations
IIAAT (Image and Importance of Agriculture Action Team) encourages all commodity groups to meet and discuss positive messages and voluntary producer implementation of the Canadian On-Farm Food Safety Program (COFFSP). Specifically, IIAAT would like to see the livestock and crop sectors work together on implementing the COFFSP. IIAAT would also like to see Alberta Agriculture, Food & Rural Decelopment (AAFRD) encourage and facilitate such meetings.
Develop a link between the various segments of the Alberta agri-food industry and the Canadian Supply Chain Food Safety Coalition (CSCFSC) by the summer of 2002 via the CSCFSC and the Agriculture and Food Council of Alberta
Increased funding and resources for the Food Safety Information Line from conditional grants from Alberta Health and Wellness and AAFRD
Increase funding and resources for the Food Safety Information Line from Alberta Health and Wellness. $20,000 to $60,000 to begin the 2002 – 03 fiscal year.

Food Safety continued

Recommendations
IIAAT (Image and Importance of Agriculture Action Team) encourages all commodity groups to meet and discuss positive messages and voluntary producer implementation of the Canadian On-Farm Food Safety Program (COFFSP). Specifically, IIAAT would like to see the livestock and crop sectors work together on implementing the COFFSP. IIAAT would also like to see Alberta Agriculture, Food & Rural Development (AAFRD) encourage and facilitate such meetings.
Develop a link between the various segments of the Alberta agri-food industry and the Canadian Supply Chain Food Safety Coalition (CSCFSC) by the summer of 2002 via the CSCFSC and the Agriculture and Food Council of Alberta
Increased funding and resources for the Food Safety Information Line from conditional grants from Alberta Health and Wellness and AAFRD
Increase funding and resources for the Food Safety Information Line from Alberta Health and Wellness. $20,000 to $60,000 to begin the 2002 – 03 fiscal year.
Request that the Agriculture and Food Council of Alberta, CFIA, AAFRD, Alberta Health and Wellness, and industry sponsor a food safety workshop to inform, educate and discuss issues. This should begin by fall 2002 or early winter and be held annually. The outcomes of this workshop should be clearly defined.
Government should attempt to increase the consistent interpretation and enforcement of food safety standards in Alberta and also work to ensure they are uniform with other provinces so that industry will not have to deal with interprovincial or intraprovincial inconsistencies. Immediate Regional Health Authority managers, Alberta Health and Wellness and AAFRD should determine how this is to be done and report back to their respective Ministers. In order to develop commodity specific trace-back and identity preservation initiatives, utilize existing federal/provincial working groups in conjunction with industry representatives from the CSCFSC at a national level. Agriculture and Agri-Food Canada could direct CARD funding to these initiatives and use a model similar to that used in the development of on-farm food safety programs by commodity groups. The Canadian Federation of Agriculture was the node for transmission of both funding and information between commodity groups in on-farm food safety initiatives, and this appeared to work well.
That Alberta needs a knowledgeable and experienced taskforce to quickly deal with arising issues in export markets such as food safety, phytosanitary etc.

Sustainability

Recommendations
Environmental goods and services provided by managers of agricultural landscapes have value through market-based solutions, incentives and other economic instruments a) Land managers understand the present and potential benefits and financial opportunities from producing environmental goods and services (EGS) b) Society accepts that managers of agricultural landscapes and viable rural communities help to achieve everyone's environmental goals c) Policy barriers that limit the development of environmental goods and services are identified and removed as follows: • Remove all perverse incentives, policies, legislation and programs that may impact the development of an EGS system. • Overall: Government to establish a trust fund for financing the transition to economic and fiscal EGS instruments beyond the pilot work in this Action Plan. • Overall: Agrivantage to commission the Pembina Institute for a third-party expert audit of this Action Plan for technical, budgetary and time aspects. • Overall: Agrivantage to enable the fast-tracking of the ESAT Action Plan to ensure effective and immediate coordination, implementation and integration with developing federal, provincial and local initiatives.
This team (Long-term Farm Profitability and Sustainability) supports the initiatives if the Environmental Stewardship Action Team (ESAT) and requests that they consider the points listed in the "Background" section under Initiative #4 of the Long-term team's report

Animal Welfare

IIAAT (Image and Importance of Agriculture Action Team) believes that an industry driven process will be more successful than legislated action with respect to livestock welfare and therefore supports the work of the Alberta Farm Animal Care Association (AFAC).
IIAAT supports the Alberta Farm Animal Care Association (AFAC) and Growing Alberta working together to promote the successes of Alberta's livestock industry in the area of improving livestock welfare.

Theme: Growing Rural Communities

Development & Diversification

(These recommendations were referred to the joint Alberta Agriculture, Food and Rural Development — Alberta Economic Development, Rural Development Initiative)

Recommendations
To compile research and factual information that builds an accurate and useful picture of communities including population base and land ownership based on structure. The information should include future projections to help planners make infrastructure and zoning decisions. a) To create a clear and concise document that provides accurate information about taxes and regulations based on operation structure that allows for comparison. This is a means of addressing concerns and perception that have been created due to the lack of information.
Increase online availability and access to information about government services available to the community with respect to economic development and new business development.
To support the development of a "community driven" model/process of capacity building/rural development by developing criteria that connects existing funding and resources to identified community needs, leadership, and capacity building. a) Promote local communities to attract new residents, including seniors and —encourage young people to return after completing post-secondary education. b) Seniors -expand the use of home care. Urge federal government to adopt the recommendations outlined in the Standing Senate Committee report on Quality End-Of-Life Care: The Right of Every Canadian. c) Hospitals • Refocus use of some existing facilities for clinics, long-term care, etc. d) To increase the leadership capacity in rural Alberta, it is recommended that we: • Re-establish a leadership network to support the development of individual capacity within the family, the community and the province. • The "Right Now" magazine locate and feature the top leaders in rural Alberta (past and present) to showcase their stories to other communities. The criteria would be that they are people who lead by example, take responsibility and show results. We support organizations and agencies that pursue the development of new tools to support leadership development and transition of leaders and business managers in Alberta. An example of this is the Agriculture and Food Council's Innovation in Agribusiness Management Fund. e) To investigate, promote and develop resources to address dispute resolution in communities that are experiencing conflict. Examples of these might be the Farmer's Advocate Office (AAFRD), Inter-municipal Dispute Resolution (Alberta Municipal Affairs), Alberta Arbitration and Mediation Society and examples of community dispute resolution such as "Synergy," the program initiated by the Energy Utilities Board.
There is an immediate need for an inter-departmental rural policy that includes a firm commitment from all (provincial) government departments and ministries. This policy development process should include input from all stakeholders and must be created in concert with rural Albertans. We support the new cross-government rural development initiative that has just been started by AAFRD to achieve this recommendation.
To consider a 'watchdog' or 'auditor' to oversee rural development policy in all areas of the province

Business Partnerships

Ag Summit was committed to working towards a common long-term vision for Alberta's Agri-food Industry. This vision is the creation of *"a collaborative, positive, competitive business climate that supports the continued growth of a profitable and environmentally sustainable agriculture and food industry in Alberta."*

Ag Summit captured and reported threats and challenges to achieving this vision early in the process. The *Catalyst for Growth — Framework for Change* document recorded these threats as myopic thinking in terms of local borders and boundaries, distrust of other industry players and segments of society, and carving out and sustaining positions in an increasingly competitive global market. Working collaboratively by forging value chains and strategic alliances, and communicating and transferring knowledge effectively, were challenges listed to work towards.

Many Action Teams discussed how to deal with these threats and overcome the challenges and made recommendations to that end.

Ag Summit Recommendations

Ag Summit recommendations concerning the creation of business partnerships came from six Action Teams. These teams are the Image and Importance of Agriculture (Image), The Alberta Centre of Entrepreneurial Excellence (ACE), Innovation Strategy for Crop and Livestock Opportunities (Innovation), Infrastructure in Rural Communities (Infrastructure), Attract Equity Financing to Primary Agriculture and Agri-Industry (Equity), and Competitiveness in a Global Market Action Team (Global). These recommendations describe strategies that encourage a business culture, industry and movement of products. They include strategies to:

- *Create Entrepreneurial Culture*
- *Encourage Strategic Partnerships*
- *Develop Value Chains*
- *Create Other Strategic Alliances.*

Yesterday's and Today's Actions

A business approach that supports industries, businesses and governments working together to create a competitive advantage and business growth is supported in current Government of Alberta Business Planning processes. As such, the majority of the recommendations arising from Creating Business Partnerships are being addressed and given appropriate actions on an on-going basis.

Partnerships are considered necessary to create information networks between academia, government and industry. Networks build an entrepreneurial culture that encourages industry clusters among similar agriculture and agri-food businesses. These clusters improve economies of scale as well as promote and develop value chains to create stronger links in key export markets.

Create an Entrepreneurial Culture

Alberta's agri-food industry has a strong entrepreneurial spirit. Several Action Teams felt this strength was one of the keys to the long-term success of the industry and that focused effort needs to be taken to expand this strength and embed it throughout the whole industry. Action team recommendations called for: greater coordination between government and industry players at all levels; better exchange of information and market intelligence; identification of new and key markets and products; and, a way to measure success.

Facilitate Services to Existing Exporters and Entrepreneurs.

The need to create an entity to facilitate an entrepreneurial culture has been incorporated into the organizational structure of Alberta Agriculture, Food and Rural Development (AAFRD). The Industry Development Sector of AAFRD restructured in 2001/02 and created the Ag-Entrepreneurship Division. This division provides leadership to the industry, academia and government over quality agri-entrepreneurial education opportunities in the agri-food industry, identifies and channels resources needed to jump-start emerging industries and to assist growth and development of agri-entrepreneurial enterprises.

The Agri-Processing Branch in the Business and Innovation Division and The Processing Development Division of AAFRD works closely with entrepreneurs to adopt new technology and develop new products (food, non-food, agri-industrial).

The Processing Development Division announced, on April 30, 2003, the new Agrivalue Processing Incubator, which will be built beside The Food Processing Development Centre (FPDC) in Leduc. Their close proximity will further complement FPDC as the Food Processing Centre of Excellence and allow easy exchange of staff and equipment between facilities. AAFRD and AVAC Ltd. (a not-for-profit company that develops value-added agriculture in Alberta) are joint partners in the $12 million facility. The FPDC helps develop over 100 new products and processes each year. Its services are designed to strengthen and expand the capability of Alberta's food processors to meet the challenges of the market place through application of new technology and the development of new or improved products and processes.

The Incubator will give Alberta's emerging entrepreneurs the resources they need to succeed in the market place by providing dedicated production facilities, business-planning guidance, and access to industry expertise. It will help start-up companies move from product and process development to the establishment of their own facilities. The Incubator will also house the Centre for Agri-Industrial Technology (CAIT). This center is a research facility that focuses on the non-food use of agricultural commodities, which is increasing in importance worldwide. New products could include the manufacture of nutraceuticals, industrial products and health care products.

In facilitating services to exporters, Alberta Economic Development (AED) provides key partners and clients with timely strategic market intelligence and information as well AED stays current on emerging issues (inclusive of trade policy concerns) and trends impacting Alberta's competitiveness

in the different markets. In addition, the Economic and Competitiveness Division in partnership with the Agriculture and Food Branch of AED and the Industry Development Sector of Alberta Agriculture, Food and Rural Development (AAFRD) undertakes an ongoing role in analyzing and assessing Alberta's competitiveness, trade flows and distinct advantages relative to export markets.

Measure Progress

Through the Growth Summit in 1997 and Ag Summit 2000 the Alberta government and Industry identified an industry opportunity to expand the agri-food industry to $20 billion in value added and $10 billion primary production by the year 2010. In response to this, a draft Alberta's Agri-food Industry Growth Strategy has been developed that illustrates what an industry of this magnitude could look like.

The Competitiveness in a Global Market Action Team recommended that benchmarks be set to measure progress towards the above opportunities. In the agriculture and food industry, farm cash receipts and food and beverage value of shipments serve as reliable benchmarks to measure progress. AAFRD, Economic and Competitiveness Division regularly reports on industry progress using these benchmarks.

Identify Priority Products and Markets

The Competitiveness in a Global Market Action Team asked that the top five products and export markets be identified. Through the development of the draft Alberta's Agri-food Industry Growth Strategy the Alberta government has identified five key sectors that have significant opportunities for growth. These are beef, pork, processed meats/ready meals, nutraceuticals/functional foods and non-food/industrial uses. Major successes in these key sectors will help create the "critical mass" needed to spur growth of the agri-food industry to the $20 billion in value added and $10 billion primary production by the year 2010 target. For more details refer to the draft Alberta's Agri-food Industry Growth Strategy chapter in this report.

Create Business Opportunities in Key Export Markets

The Agriculture and Food Branch of Alberta Economic Development (AED) and industry in collaboration with Alberta Agriculture, Food and Rural Development (AAFRD) has identified five priority export markets — United States (U.S.), Japan, Mexico, South Korea and China. These selections are based in part on the Alberta International Marketing Strategy (AIMS) at **http://www.alberta-canada.com/statpub/pdf/news_aims.pdf** that was developed by Alberta Economic Development in conjunction with industry stakeholders and AAFRD. In addition to the five priority markets AIMS identified Germany, Italy, Netherlands, Russia, Taiwan, Hong Kong and the United Kingdom as target markets. AIMS used an October 2000 study by Alberta Agriculture, Food and Rural Development (AAFRD). This study looked at 31 of Alberta's markets. AAFRD's Planning and Competitiveness Sector in partnership with AED and the Industry Development Sector undertakes an ongoing role in analyzing and assessing Alberta's competitiveness, trade flow impacts and distinct advantages relative to export markets.

Encourage Strategic Partnerships

Action Teams recognized that strategic partnerships lead to industry growth. They identified that the key to encouraging strategic partnerships is to build a strong knowledge, research, technology foundation on which businesses can grow and flourish. The Alberta government recognizes the value of strategic partnerships and works with stakeholders to foster them. These include networks and clusters.

Build and Maintain Effective, Collaborative, Focused Networks

Networks bring together the full range of participants needed to develop an idea into a marketable product. It can include any combination of interested parties from entrepreneurs, academia, financiers, developers and marketers. Since the Ag Summit process began, AAFRD, Alberta Economic Development (AED) and Innovation and Science (I & S) have taken a more active role in coordinating and facilitating the networks that include all participants throughout the technology development and commercialization process. Interested parties are brought together for research, product development, business expansion and communication of best practices. Current examples include:

- Alberta Bioplastic Network
- Conjugated Linoleic Acid-enriched (CLA) Network
- Triticale Network
- Peace Innovative Network
- Alfalfa Seed Network
- Black Currant Grower Network
- Commercialization Network

These networks coordinate the interaction and collaboration between industry, academia and government to identify business opportunities and information gaps. They become one of the key drivers in research and development as well as commercialization of new technology.

Alberta's Agriculture Research and Innovation Strategic Framework (ARIF) was released by the Deputy Premier and Minister of Agriculture, Food and Rural Development (AAFRD) in the spring of 2003. It promotes collaboration and cooperation by involving universities and government agencies and the private sector. Universities handle basic research, applied research and scientific manpower training. Governments handle applied and long-term research and perform technology transfer. The private sector handles targeted developmental work and direct application and commercialization. The complete ARIF is attached as appendix C.

Alberta Agriculture, Food and Rural Development (AAFRD) partners with AVAC Ltd. — a not-for-profit company that helps to develop value-added agriculture in Alberta — encouraging entrepreneurs in the pursuit of value-added agriculture and pre-commercialization of new products. An AAFRD/AVAC Ltd. Liaison Team was created in 2002 to provide "first point of contact" assistance in helping entrepreneurs develop investment proposals which can be submitted to AVAC Ltd. The "Idea Builder Program" and "Pre-Commercial and Entrepreneurial Program" from AVAC Ltd. provide up to $25,000 seed capital for smaller, early-stage projects and $25,000 or more for pre-commercial projects.

Alberta Economic Development (AED) has established and is continuing to open new international offices in key markets (including the U.S.A, Japan, China, Hong Kong, Taiwan, Mexico, [Munich] Germany with the opening of London in the fall of 2003) of priority to Alberta's trade and investment interests. The major objective is to provide clients with timely market information and build key networks throughout the world. In addition, the existence of these offices allows industry to stay current on emerging issues and trends impacting Alberta's competitiveness and ability to grow and diversify in export markets.

AAFRD continues to work with international networks and is currently focused on ongoing bilateral relationships with two priority-trading partners, the U.S. and Mexico. Periodic meetings occur to exchange information and improve communication and understanding with U.S. border states and to seek resolution of several pressing cross-border issues. An example is the Montana-Alberta Agriculture Opportunities Conference, which is held yearly to discuss issues such as the United States Food and Drug Administration (USDA) perspective on trade issues, domestic support and subsidies to agriculture producers, agribusiness and transportation etc.

Encourage Clusters Among Similar Agriculture and Agri-food Businesses

Business clusters are concentrations of similar companies with related products or services, their joint suppliers and supporting economic foundations. Clusters provide an environment that drives both collaboration and constructive competition — which in turn encourages innovation, improves the position of firms against external competitors and stimulates the formation of new business. Business clusters cannot be artificially created. They grow when the conditions are right. Policies may contribute to the creation of the right conditions but that does not always guarantee success.

In Alberta, there are actually three geographic centres that have encouraged the development of agricultural clusters: Lethbridge, Calgary and Edmonton. Lethbridge has developed into the cluster of beef feedlots that is known as "feedlot alley." The existence of Agriculture and Agri-Food Canada's Beef Research Centre of Excellence, the University of Lethbridge and an extensive irrigation system used to produce feed and provide livestock water supply helped create the "conditions" for its growth. The Aquaculture Centre of Excellence is also located in Lethbridge.

Calgary has developed into an active centre for biotechnology and information technology clusters. The University of Calgary, the head offices for DowAgro Sciences, Gnome Prairie and the oil and gas industries created the conditions for this cluster. Calgary is also the Western Canadian hub for food retail and wholesale distribution and a major center for Alberta's Beef Industry.

Edmonton is emerging as a cluster for food processing, biotechnology and health technology. The University of Alberta, AAFRD's Food Processing Development Centre, The Alberta Agricultural Research Institute and the Alberta Research Council have all played a role in creating a condition for the development of this cluster in Edmonton. The headquarters for feather and pork industry associations are also located in Edmonton.

Since the beginning of Ag Summit, AAFRD has become more strategic in encouraging and developing clusters among similar agriculture and agri-food businesses. AAFRD works cooperatively with Economic Development Authorities and Municipalities to assess and develop clusters. Economic Development Edmonton (EDE) and the Alberta Economic Development Association (AEDA) provide assistance relating to cluster formation. Also, AAFRD, the Agriculture and Food Council and Alberta Economic Development (AED) further collaborate in areas of value chain, market development, training, food safety, etc.

Develop Value Chains

The Competitiveness in a Global Market Action Team felt that value chains would lead to industry growth. Since the Ag Summit process began, AAFRD and the Agriculture & Food Council (AFC) have collaborated on a joint Value Chain Initiative. This initiative focuses on educating the agri-food industry about opportunities and facilitating the development of value chains, which are vertical alliances of enterprises collaborating to achieve a more rewarding position in the marketplace.

The Value Chain Initiative provides information, education, facilitation or specialized expertise and provides access to support and funding. It has developed both a national and international network of contacts to aid in developing and promoting the concept of value chains. An awareness and education plan was developed for 2001-2003 to promote the value chain concepts and to increase understanding of how to apply this business approach. Information and resources can be found on both Agriculture and Food Council's website at **http://www.agfoodcouncil.com/serve/chainindex.html** and AAFRD's website at **http://www1.agric.gov.ab.ca/$department/newslett.nsf/all/bb485?opendocument**.

The Value Chain Initiative created opportunities for the industry to establish networks and communicate value chain best practices via conference and workshops. A conference "Meeting the Market . . . growth through strategic alliances" was held in November 2002. As well, an AAFRD staff and Value Chain Facilitator Workshop training session was held in March 2003. A value chain handbook was developed and an Interactive CD Rom is in the process of completion and expected to be launched by the summer of 2003.

The Value Chain Initiative conducted several training seminars for industry. Emphasis has been placed on aiding several Alberta companies through the value chain development process. Many companies focused on domestic markets and increased coordination within the supply chain to reduce costs and increase efficiencies. Some companies are exploring the value chain concept for key export markets. The value chain initiative is currently helping specific companies with export projects.

In 2002, Alberta's Co-operatives Association legislation was amended to define new generation co-operatives as a legitimate business arrangement for agricultural ventures in Alberta. It gives an excellent opportunity for commodity producers who want to work together by creating a value chain. Since the changes to the legislation were made, four new generation co-ops have been established.

They are:

- Westlock Terminal, a farmer-owned high throughput grain terminal
- Alberta Egg Producers Co-op, an egg processing co-op
- Alberta Wapiti Products Co-op, an elk product marketing co-op
- Alberta Value Chain Co-op, a bison marketer.

To enhance the Value Chain Initiative and provide information about opportunities a Value Chain Resource Network is being established to provide increased opportunities for agri-business to become aware and evaluate this business approach.

Create Other Strategic Alliances

Action Teams realized that strategic alliances would be of significant benefit to the industry. They recommended that industry should work alongside the provincial government in international trade negotiations; that exporters, transporters and government work together to look for ways to enhance Alberta's ability to reach our markets; and, the province and industry should work to develop centres of excellence where researchers, producers, processors and marketers could combine their knowledge and skills to advance our agri-food industry.

The business approach that supports industries, businesses and governments working together to create a competitive advantage and business growth is supported in current Government of Alberta Business Planning processes.

Work to Represent the Alberta Point of View at International Trade Negotiations

The Government of Alberta works closely and cooperatively with the Canadian Agri-Food Trade Alliance (CAFTA) to collect and analyze information and develop policy positions and make recommendations on international trade negotiations. The primary focus is on the World Trade Organization agriculture negotiations. CAFTA is a well established national organization that is recognized by the federal government, provincial governments, international industry organizations and other countries as a voice of Canada's industry on international trade negotiations.

CAFTA is a coalition of associations, organizations and companies representing producers, processors, marketers and exporters of agriculture and agri-food products that account for more than 80 per cent of Canada's agri-food exports. The members are dependent on trade, and are united in supporting more liberalized agriculture and agri-food trade.

CAFTA was created to ensure that the interests of its members are effectively represented in international negotiations through cooperation with federal, provincial and international governments and international industry. CAFTA was formed in 2000 with the merge of the former Agri Industry Trade Group (AITG) and the Canadian Alliance of Agri-Food Exporters. CAFTA's overall goal in international trade negotiations is the creation of an open, market-oriented, subsidy and tariff free agricultural trading system, which mirrors the Government of Alberta's position.

There is little need to duplicate the efforts of CAFTA by developing an independent producer group to represent Alberta's interests and concerns on trade negotiations. Instead, Alberta industry organizations/ associations/groups will be encouraged to seek membership in CAFTA or ensure that their interests/concerns are made known and reflected in CAFTA's position.

Create Centres of Excellence

Alberta has experience with agriculture and food related centres of excellence that provide world-class research, knowledge and technology services. The concept of centres of excellence and its value has been well received across the nation. Considerable resources are required to create and sustain them. AAFRD continues to develop, maintain and enhance the Centres of Excellence for Agriculture throughout the province with the focus on *Alberta's Agriculture Research and Innovation Strategic Framework* (ARIF), which is a document released in the spring of 2003.

In May 2003, a $17 million Agri-Food Discovery Place (Discovery Place), which is to be built at the University of Alberta, was announced. It will help to make Alberta's food supply safer by allowing food borne pathogen research and developing new technologies to improve the safety of our meat supply. AAFRD is contributing to the cost of the new facility. The research from this facility could be put to use at existing facilities such as the Agrivalue Incubation Facility in Leduc and the Alberta Research Council.

Transportation Alliances

An Action Team recommendation suggested that transportation alliances similar to value chains be examined as ways to reduce costs, improve efficiency and thus enhance the ability to reach markets.

Alberta Economic development (AED) in cooperation with Alberta Agriculture, Food and Rural Development (AAFRD) conducted a study on Alberta containerized freight competitiveness to key Asian markets compared to our competitors from the Midwest USA. A second study was completed comparing our competitiveness to Australia and New Zealand into the same Asian markets. The results indicated that Alberta was competitive relative to Midwest U.S.A. exporters as well as those in Australia and New Zealand, all of which are key competitors in these Asian markets. In fact, Alberta containerized freight represented the lowest cost to the key northern Asian markets. These studies were completed in 2002 – 2003 and are available from AED.

AAFRD conducted two transportation studies after the start of Ag Summit. One study was completed in July 2002 entitled *Alberta Location Advantage North-South Rail Freight Within Western North America*. The second study was completed in Feb 2003 entitled, Analysis of Freight Channels and *Costs from Alberta to Mexico*. Both studies analyzed freight channels and cost competitiveness of shipping Alberta's agri-food products from Alberta to Mexico and Western North America. These studies identified that Alberta's transportation logistics to those export markets are a barrier in the food-processing sector. Consequently, in 2003, AAFRD assigned a staff member to the Alberta Food Processors Association (AFPA) to work with them to investigate marketing and logistics and transportation efficiencies.

Tomorrow's Actions

The Alberta Government will continue to encourage a business approach that supports industries, businesses and governments working together to create a competitive advantage and business growth. However, the major focus of the Alberta government is to continue with the new programs and initiatives outlined in the various strategies presented in Yesterday's and Today's Actions above. The Alberta government will continue working closely with industry and others so that the actions and initiatives meet the needs of the industry.

The focus of Alberta Agriculture, Food and Rural Development (AAFRD) for business partnerships will be determined through the implementation of the draft Alberta's Agri-food Industry Growth Strategy and Alberta's Research and Innovation Strategic Framework. This will involve both government and industry working together towards achieving the industry opportunity to expand the agri-food industry to $20 billion in value added and $10 billion primary production by the year 2010.

Facilitate Services to Existing Exporters and Entrepreneurs.

The Alberta government continually encourages business people with export experience to participate in meetings/ workshops/conferences to share information and expertise in exporting. AAFRD with the assistance of AED will examine the District Export Council model and its value and applicability to Alberta. District Export Councils (DECs) in the US are volunteer-based organizations composed of business people who have experience in exporting. DECs coach companies in the community who are interested in exporting.

Financial Tools and Alberta's Agri-Food Industry

Through the Growth Summit in 1997 and Ag Summit 2000 the Alberta government and Industry identified an industry opportunity to expand the agri-food industry to $20 billion in value added and $10 billion primary production by the year 2010. To realize progress towards that potential, the agri-food industry requires access to several new and innovative sources of capital in addition to the existing ones. The participants in Ag Summit process concluded that a concerted and focused effort to attract significant new capital investment would need to be a major priority.

When the Attract Equity Financing to Primary Agriculture and Agri-Industry Action Team (Equity Action Team) looked at this issue they accepted the findings of studies that concluded that debt financing, which is the principal means of financing primary agriculture, is well serviced by the existing lending institutions in the province. Their primary focus was on securing new forms of financing for value-added agri-food ventures. The Team made the following comments in their report:

"Growth of the agri-food industry is considered constrained because entrepreneurs are unable to access sufficient capital. Although capital exists and is available, entrepreneurs within the agriculture and agri-food industry have difficulty accessing it in the same way that other industries do." The Equity Action Team identified several reasons for this including a lack of understanding and awareness of avenues for capital as well as a lack of business and management skills required for successful venture development. Further, the providers of growth capital, including venture capitalists, institutional investors, and angel investors do not have a very good understanding of the agri-food industry and are not actively looking for investments in this industry.

Promoting a more attractive tax environment for investment in agriculture was another issue identified by the Attract Equity Team. That team felt that the original initiative of building tax incentives for agriculture investment income needed to be revised to reflect emphasis on equality with other industries, rather than on creating tax incentives for the agri-food industry.

The Long-term Profitability and Sustainability Action Team identified the issue of retaining capital in the primary sector by examining and, if possible, implementing new and innovative ways of intergenerational turnover of agricultural land.

Ag Summit Recommendations

The various Action Team recommendations pertaining to investment fell into two major categories. They are:

1. Attracting capital to the agri-food industry — these recommendations dealt with:
   - increasing awareness between growth capital providers and those seeking funds for expansion of the agri-food industry and the development of management skills for agri-entrepreneurs.
   - creation of new investment vehicles and strategies for the agri-food industry
2. Financing intergenerational transfers.

Yesterday and Today's Actions

Attracting Capital to the Agri-food Industry

Investment in Alberta's agi-food industry comes from sources within and outside the province. On a North American wide basis, capital funds are being diverted to pay down debt and are being stretched by remodeling old facilities as opposed to building new plants. Since the food processing industry is not in an expansionary phase most new investment in Alberta will result from relocation of existing facilities in expectation of higher profitability in Alberta.

Increasing Awareness and Skills

The Attract Equity Team recognized that while putting agri-entrepreneurs in touch with investors is important it was equally important for the agri-entrepreneurs to present a sound business case to potential investors if they are to be successful. Since the Ag Summit was initiated a number actions have been taken to assist agri- entrepreneurs with the development of their business plans and management skills. Some of these programs also direct the entrepreneurs to funding sources. Initiatives taken include the following:

Idea Builder Program

AVAC Ltd. has partnered with AAFRD to enhance their Idea Builder program. The Idea Builder provides for up to $25,000 in matching funds for new agri-food projects or products such as new food and health products, marketing innovations and new food processing technologies. The Idea Builder is designed to help early-stage ideas move closer to commercialization such as developing a comprehensive business and marketing plan, obtaining industry expertise, or exploring market opportunities. This was started with a Memorandum of Understanding between the two organizations in September of 2002. For more information on this program see the following website: **http://www.avacltd.com/how_to_apply/idea_builder.shtml**

Agri-food Angel Investor Networks

In many industries, early stage financing is filled by attracting angel investor capital. Angel investors are private individuals willing to make early stage investments in promising companies or products. Angels are usually familiar with the industry they invest in and often take an active role in the businesses they finance. Estimates suggest that in the U.S.A. Business Angels are conducting more than 700,000 investment transactions a year, benefiting as many as 500,000 small companies. At the present time these angel investor networks do not exist to service Alberta's agri-food industry.

Alberta Agriculture, Food and Rural Development (AAFRD) and AVAC Ltd (a not-for-profit company dedicated to nurturing and developing a value-added agri-food industry in Alberta) are investigating the development of an angel investor network here. The investor network would link investment opportunities directly to those interested in investing in the agri-food industry. The investor network would also assist in expanding management capacity of the agri-food industry

in Alberta through mentorship of angel investors with agri-processing companies.

Competitive Advantage Program

The Competitive Advantage Program for Agriculture (CAPA) is a joint training partnership between AAFRD and Olds College. It provides business owners (mainly primary producers) with knowledge, tools and support to develop and implement their own business plans, develop financial management strategies, improve communications and negotiation skills, use effective marketing processes and strategies as well as developing effective human resource management strategies. The first group of students started in this program in the fall of 2000.

For more information on this program see the following website: **http://www.oldscollege.ca/extension/ExtensionCalendar/CAPA.asp.**

AFSC Programs

The Networking and Skills development through AFSC (Agriculture Financial Services Corporation) provides consulting to agribusiness companies on access to capital issues. This service assists clients in enhancing their business case. On April 1, 2002, AFSC and the Alberta Opportunity Company merged their consulting and financial assistant services/programs. This allows delivery of combined commercial services through a larger network of professionals throughout Alberta.

For those businesses moving product outside Alberta, AFSC provides funding through the Export Financing Program. AFSC entered into an Alliance with Export Development Canada during April 2003 to enhance AFSC's ability to assist exporters through a pre-shipment export-financing program.

AFSC also supports Alberta Food Processors Association (AFPA) programs through sponsorship funding. AFPA has training opportunities for members and associated businesses. For more information on this program see the website: **http://www.afpa.com/hr/**

In May 2003, AFSC entered into a network/matching arrangement with AAFRD to enhance communication and information sharing to link and syndicate investors and/or lenders with those needing funds to expand or start up new operations (primary or value-added). AFSC is negotiating a similar arrangement with Alberta Economic Development.

Alberta Agriculture, Food and Rural Development Reorganization

The Industry Development Sector of AAFRD was reorganized during the spring of 2002, partly in response to suggestions coming out of the Ag Summit process. At that time, two new divisions were formed: Agri-Food Investment, and Business and Innovation.

The focus of AAFRD activities is on the education and development of agri-food entrepreneurs so they are "geared up" with business plans and the accompanying knowledge to meet effectively with capital providers. While it isn't their primary function, the sector points these entrepreneurs to appropriate sources for financing.

The Business and Innovation Division works with primary producers, agri-processors and affiliated associations to secure capital for agriculture and agri-food projects by:

- having development officers consult directly with food processors to link them with the programs and financial services that support business growth
- assigning dedicated development officers to the AVAC Ltd./AAFRD liaison team (of the core team of eight AAFRD staff advising and coaching with AVAC Ltd. programs, six are from Business Innovation)
- supporting and partnering with the Alberta Food Processors Association to deliver programs and services
- assisting new food processing companies to develop business plans and access capital
- providing funds through the Agri-Processing Incentive Program to encourage projects and activities that promote value-added growth, diversification and improved competitiveness in the agri-processing industry
- partnering with AVAC Ltd. to maintain the Sources of Capital directory.
- supporting train-the-trainer activities for (succession planning) business management and business plan development for primary producers.

The Agri-Food Investment Division works with agri-food entrepreneurs and investors to obtain investment for established or expanding value added processing and primary agriculture production in priority sectors. This division does the following:

- supports investors by identifying and communicating opportunities, facilitating project development and sourcing capital on a project by project basis,
- builds and maintains relationships with the financial community and institutional financiers
- networks with AVAC Ltd., Alberta Research Council, AFSC and other agricultural lenders

The Agri-Food Investment Division is also investigating the development of an investor network that could link agri-food development opportunities with those willing to invest in them. This would also expand management capacity of the agri-food industry through mentoring by angel investors.

New Investment Vehicles and Strategies

Since the Ag Summit was initiated the provincial government has taken action to develop new and improved innovative investment vehicles for the agri-food industry. In addition steps have been taken that will result in the attraction of investment capital to the industry.

New Generation Cooperatives

The Alberta Government amended the Cooperatives Act in 2002 to allow for the creation of New Generation Cooperatives (NGC). This is a new type of co-op that is formed for marketing and/or value added processing of commodities. Members have a specific interest in the commodity involved. A new generation co-op has the following features:

- keeps the one member one vote rule of a traditional coop
- restricts membership to those fully committed to the business venture
- allows for a share class to have an associated delivery contract
- allows for investment shares
- restricts business activity to agriculture

- allows the coop to retain and preserve the geographical or community integrity in a business venture.

A New Generation Cooperative seminar was held in 2002 and background and support material unique to Alberta was built. Further work is underway in developing technology transfer materials based on the seminar's papers. For more information visit the web **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa6267?opendocument**

Financing through AFSC

AFSC (Agriculture Financial Services Corporation) is a provincial crown corporation with a private sector board of directors that provides farmers, agribusiness and other small business loans, crop insurance and farm income disaster assistance. There are currently about 10,000 loans outstanding under AFSC's programs totaling more that $1 billion with anticipated new funding of $160 million annually.

AFSC's mandate includes the role of lender-of-last-resort, that is filling financing gaps between funding available from traditional debt sources and that provided by granting agencies and private equity. Maximizing the debt available to potentially viable agri-food companies, on reasonable terms, serves to encourage equity investors by potentially improving their return on investment. Accordingly, it is not in AFSC's mandate to be a potential equity participant. AFSC will nevertheless continue to review its lending programs and opportunities to ensure they address the funding gap wherever debt is the appropriate financing vehicle, particularly where this can be achieved in conjunction with other participating agencies and alliance partners.

On the primary agriculture side, AFSC has made a number of enhancements to lending programs to facilitate access to capital and expand loan limits to keep pace with industry requirements. AFSC is a primary lender for beginning farmers and provides flexible loan programs, incentives and financial counseling to assist new entrants into the industry as well as existing producers to develop and grow into commercially viable farm operations. Other direct and guaranteed programs provide producers access to capital for a wide range of agricultural purposes including a disaster loan program geared towards assisting producers to regain financial viability as a result of severe losses to agricultural commodity revenues which are beyond the control of management. All of these programs provide the primary agricultural sector with renewal and stability, key elements for facilitating long-term growth AFSC assists agri-food entrepreneurs who cannot obtain debt financing from commercial institutions by:

1. Providing start-up and expansion funding.
2. Continuing to facilitate and syndicate access to debt capital by partnering with financial institutions through alliances and other agreements.
3. Providing guarantees to financial institutions to enable agricultural business companies to obtain financing for working capital purposes.

The AFSC and Alberta Opportunity Company merger in April 2002 has enhanced AFSC's ability to provide more financing to the agri-food industry through their larger network of professionals throughout the Province.

Creating Financial Instruments through Clustering

The Attract Equity Financing to Agriculture and Agri-Industry Action Team (Equity Action Team) felt that financial clustering would work to raise capital and attract equity financing. The Team felt that a study should be conducted to explore options and alternatives of the clustering approach with respect to financial instruments.

The Alberta Economic Development Authority (AEDA) and the Alberta Science and Research Authority (ASRA) Task Force have looked at the issue of raising capital and attracting equity financing. They are working on a report called "Capturing the Power of Innovation: Improving Access to Capital in Alberta which will include recommendations on improving the availability of early stage, patient equity capital for Alberta.

Increasing capital by coordinating complementary initiatives of research institutions, universities, and private sector organizations.

The Attract Equity Financing to Primary Agriculture and Agri-Industry Action Team members were aware of some of the initiatives that the Alberta Science and Research Authority and others have undertaken to enhance investment capital through strategic and integrated planning and coordinated research. Subsequently, they reaffirmed their support for government, research institutions, universities and private sector organizations to continue in this cooperative environment.

The provincial government and agri-food industry see value in taking good ideas to the market place. In the spring of 2003, two major initiatives were announced. The first was the enhancement of the Food Processing Development Center (FPDC) in Leduc with the co-location of the Center for Agri-Industrial Technology (CAIT) and the addition of the Agrivalue Processing Incubator to the site. The second announcement was the partnership between the University of Alberta and AAFRD for the construction of Discovery Place.

The enhanced Food Processing Development Center will support both food and non-food product development. With the addition of the Agrivalue Processing Incubation facility, which is funded jointly by AVAC Ltd. and AAFRD, entrepreneurs using the Center will have access business planning and marketing expertise to take their products from discovery to the market place. This strategic arrangement will help start-up companies move from product and process development to the establishment of their own facilities. Since the Ag Summit, AAFRD completed a $4.0 million expansion of the Food Processing Development Center (FPDC). In 2002, AAFRD also installed $1.5 million of new processing equipment in CAIT and FPDC

In May 2003, the University of Alberta and Alberta Agriculture, Food and Rural Development (AAFRD) announced the construction of Discovery Place and the signing of a joint Memorandum of Understanding agreement to integrate research and development efforts through jointly funded positions, shared research facilities and enhanced collaborative research opportunities. The agreement will ensure that future human and financial resources are focused on the Alberta Agricultural Research Institute research priorities of value adding and agri-health, bio-based products and sustainable production. When completed, Discovery Place will work on food borne pathogen research and develop new technologies to improve the safety of the world's meat supply.

Financing Intergenerational Transfers

There is an aging farm population. Concerns have been raised that farm business transfers are going to result in high levels of debt that cannot be serviced by "On Farm Production." The Long-term Farm Profitability and Sustainability Action Team felt that for farming to be a successful business there needs to be better policies and financial tools for intergenerational farm transfers.

Alberta Agriculture, Food and Rural development (AAFRD) provides information on intergenerational transfers to producers though its Tax Update and the Between Generations Seminar Series. These seminars provide producers with knowledge and tools for intergenerational transfers and their practical application. They are also used to gather information, and cross-educate the providers of intergenerational transfer tools and to see if tools that they are using for other businesses could be used for primary agriculture.

AFSC (Agriculture Financial Services Corporation) has a vendor mortgage program designed specifically to assist succession financing. In addition, the Beginning Farmer Program offered by AFSC provides stable, long term funding to assist beginning farmers in developing and maintaining viable farm operations.

As part of the Agricultural Policy Framework (Renewal Chapter) the provincial and federal governments are working on a strategy to help farmers who are planning farm transfers. The Access to Capital Services section of the Framework will make a core set of programs and services available to all primary producers in Alberta. One of these will be a business-planning component that will aid transitioning farm families.

The private sector is expected to assist primary producers exiting the industry. AAFRD's Business and Innovation Division will play a lead role in developing this private sector capacity.

Tomorrow's Actions

Attracting Capital to the Agri-food Industry

Many of the initiatives identified in the Yesterday and Today's section will continue to be implemented. AVAC Ltd., AFSC, AFPA, and AAFRD will continue to enhance their efforts in the business and financial skills development area for agri-food business owners/managers so they can better attract the "appropriate" sources of capital for their enterprises. Many of their new programs and initiatives resulting from the 2002 reorganization of the Industry Development Sector of AAFRD are just starting to show results.

These programs and initiatives will be adjusted as required based on industry feedback. In particular the Industry Development Sector's Agri-Food Investment Division will proceed with their work to develop an Angel Investor Network for the agi-food industry.

Agriculture Policy Framework

The Renewal Chapter of the Agriculture Policy Framework specifically addresses areas for business skill development that should aid primary producers when acquiring equity for their businesses. The specific programs are under development and will be announced as they are finalized.

Alberta's Agri-Food Industry Growth Strategy (draft)

To realize progress towards the identified opportunity of expanding the agri-food industry to $20 billion in value added and $10 billion primary production by the year 2010, it is projected that $3.2 billon of investment in primary and $4.6 billion of investment in value added processing would be required. The Draft Alberta's Agri-food Industry Growth Strategy recognizes that attracting this amount of capital will be challenge to the industry. To assist them Alberta Agriculture, Food and Rural Development (AAFRD) will be developing a comprehensive knowledge base that will provide industry with the information to develop their products to meet the needs of the market and their business to meet the needs of the investors.

New investment vehicles and strategies

Community Bonds

The Competitiveness in a Global Market Action Team (Global Action Team) stated several expected outcomes that could result from opening access to rail beds. In their report they state the following:

a. We anticipate greater competition between railways not only in cost of shipments to the users but also in service.
b. This will allow railways that would otherwise be abandoned by the major railway companies to be kept open.

The Global Action Team recommended that the provincial government reinstate the Community Bond Program or other programs as recommended by the Attract Equity Action Team. Those bonds could then be used to attract "private" ownership of branch lines and sidings.

AFSC offered local opportunity bonds as a pilot program in the mid 1990s. The program was cancelled due to heavy administration costs and little take-up of investment at the local level. One of the issues in the Community Bond pilot was the risk involved in the ventures and who was to underwrite that risk.

The provincial government recognizes that the agri-food industry needs investment tools to be able to finance infrastructure such as rail lines, water pipelines and elevators. AAFRD will be reviewing the Cooperatives Act which was amended in 2002 to see if there are provisions in the Act that could be used to finance this type of infrastructure.

Agrivalue Commercialization Bridge

To assist agrivalue entrepreneurs to commercialize their ideas AVAC Ltd. will be exploring the concept of an "Agrivalue Commercialization Bridge." This bridge could be constructed on three pillars:

1) Create an "Agrivalue Commercialization Start-up Fund," and have AVAC Ltd. create and administer an appropriate investment program for the fund using AVAC's current governance and royalty model.
2) Encourage creation of an "Agrivalue Managed Investment Pool/Facilitation System" whereby private investors (angels, venture capital providers, others) can participate in making equity investments in high quality agrivalue projects (host/facilitator to be determined).
3) Encourage AFSC to develop an "Agrivalue Debt Financing Program" under tailored commercial arrangements to provide debt financing for new ventures in areas of strategic importance to achieve Alberta's opportunity of expanding the agri-food industry to $20 billion in value added and $10 billion primary production by the year 2010.

Based on what AVAC Ltd. has learned, there is a need to facilitate all three types of financing arrangements and there is also a need to build and inject management capabilities at increasing levels of skill and sophistication as the concept moves to market. If AVAC Ltd. proceeds with this concept, they will develop it with other partners and stakeholders involved in the agri-value industry.

Research and Development

Science opens the door of possibilities toward achieving crops that are resistant to climate changes, enhanced processing technologies and practices, high quality food products and sustainable livestock production — to name a few. The need for a strong research and development program that included commercialization was considered a priority from the beginning of the Ag Summit. This need was captured in the "Catalyst for Growth — Framework for Change" document. The key identified issues and challenges were:

- Research and Development (R & D) efforts are happening in silos across the province; co-ordination and collaboration is vital.
- R & D efforts need to focus on the industry's strength; turf protection and multiplicity of players and agendas is counterproductive.
- Agriculture and food must be allocated its "fair share" of aggregate R & D resources.
- Alberta's role within the Canadian and global context must be defined in terms of future opportunity.
- Better communication and information sharing is required to ensure optimal application of R & D throughout the agri-food industry.

Ag Summit Recommendations

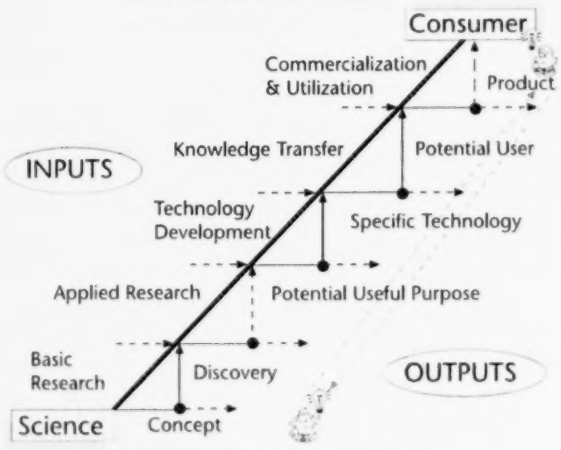
In response to these issues and challenges, the Ag Summit Innovation Strategy for Crop and Livestock Opportunities Action Team and the Supply Chain Food Safety Action Team provided recommendations directed at R&D activities. The Action Teams identified four recommendations that requested the following:

- Key research and technology areas be identified that will create and maintain a competitiveness advantage.
- Alberta's regulatory framework supports diversification.
- A technology transfer system is further developed and enhanced.
- Food safety practices that are based on science and the science is shared with trading partners.

Yesterday's and Today's Actions

Alberta has a diversified economic base — energy, agriculture, forestry, tourism, and mining are some of the traditional key components of our economy. Alberta's rich resource base in these industries has allowed for a relatively stable economy but without Research and Development (R&D), Alberta would not have remained a leading player in many of these industries. Over the past years, new advances in science have also allowed for the discovery that these industries have many applications in other components of the economy, including the rapidly growing health industry, and on each other. An example is the role the oilseed industry (e.g. canola) has in the development of plastics and bio-fuels: an area that in the past has been exclusive to the energy industry. These discoveries would not have been possible without the development of an R&D system that spans from basic research through to commercialization as depicted in Figure 1.

Figure 1 — **Alberta Agriculture Innovation Continuum**



The Life Sciences present the opportunity to strengthen and grow Alberta's major economic sectors including agriculture, health, forestry and energy. From 2000 to 2003, Alberta Agriculture, Food and Rural Development (AAFRD) and Alberta Agricultural Research Institute (AARI) worked with the Alberta Science and Research Authority (ASRA), and several key ministries including Innovation and Science, Environment, Health and Wellness, Sustainable Resource Development, and Economic Development to develop an Integrated Life Sciences Strategy for Alberta. The resulting Life Sciences Strategy creates a framework for growth of new strengths and development of current industries by:

- Developing leadership in the life sciences
- Increasing research excellence
- Improving the environment for life science businesses
- Training, attracting and retaining high quality life sciences workers, researchers and managers
- Engaging the public in productive dialogue on life sciences development

Alberta's Agricultural Research and Innovation Strategic Framework (ARIF)

Through the Growth Summit in 1997 and Ag Summit 2000 the Alberta government and the agri-food industry identified opportunities to expand the industry to $20 billion in value added and $10 billion primary production by the year 2010. Progress towards that potential will be the result of an effective agricultural research and development (R&D) system. According to some studies and reviews of the agricultural R&D system, conducted between 2000 and 2003 by the Alberta Agricultural Research Institute (AARI) and others, it is clear that the agricultural R&D system will be challenged to deliver upon the needs to move towards the opportunities. These studies (Catalyst for Growth — Framework for Change — 2001 and the Millennium Study — 2002) have indicated the following issues and challenges in the agricultural R&D system:

- The current system is under-performing due to fragmentation among R&D performers, funders, and other key stakeholders.
- The current system lacks the required leadership and direction.
- There is untapped R&D capacity in the current system.
- The current R&D system lacks capacity in some key priority areas identified as critical in attaining the identified industry opportunities of expanding the agri-food industry to $20 billion in value added and $10 billion primary production by the year 2010.

Several other strategies including the *Securing Tomorrow's Prosperity* (Alberta's draft Value-Added Strategy), the *Draft — Alberta Technology Commercialization Strategy, Water for Life — Alberta's Strategy for Sustainability*, and the *Draft Alberta's Agri-food Industry Growth Strategy* have also provided a better understanding of the R&D needs and challenges in Alberta. To that end, the agricultural sector has developed the Alberta Agricultural Research and Innovation Strategic Framework (ARIF). ARIF was designed to intersect with the other growth strategies, R&D plans, and other strategic initiatives to ensure that Alberta's agricultural R&D system is aligned, has strong leadership and accountability, is well resourced, provides for commercial opportunities and is well recognized locally, nationally and globally. These initiatives will drive an industry based on sustainable growth, market focus, economic profit, social acceptance, and responsible stewardship of our resources (water, soil and air).

ARIF provides a strategic shared vision for the provincial agricultural R&D system, particularly around the science, technology, knowledge and innovation components. This will enable the system to achieve the growth targets and outcomes as identified in the numerous strategies, and will also position Alberta as a national/global leader in agriculture and related sciences.

The Alberta Agricultural Research and Innovation Strategic Framework identifies six key goals.

1. Alberta's Agricultural R&D System is focused and guided by industry and public needs, Alberta's comparative advantage and market opportunities.
2. Alberta's Agricultural R&D System has effective mechanisms to communicate internally and externally.
3. Alberta's Agricultural R&D System delivers more products, practices and processes
4. Alberta's Agricultural R&D System attracts private and public investment.
5. Alberta's Agricultural R&D System is transparent and accountable.
6. Alberta's human resource capacity supports R&D, commercialization and innovation activities.

The implementation of the Framework details the R&D goals the agricultural industry will pursue. It clearly aligns R&D with economic growth opportunities and identifies gaps in R&D capacity. Furthermore, the ARIF will act as a guide to improve collaboration among all players in the R&D system including the funders, the R&D performers, and industry. The ARIF also recognizes the importance of the R&D continuum spanning from basic research to commercialization and identifies the need for mechanisms to assist in the transfer of knowledge and products throughout the continuum.

The implementation of the ARIF, and as a direct result of strategic investment, the following outcomes are believed to be attainable by 2010:

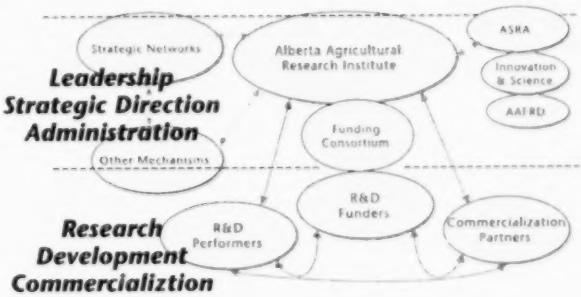
- Attracting $272 million in private investment to commercialize technologies created and enabled by the agricultural R&D System.
- Leverage $234.5 million in federal and international funding through existing and new agencies and programs focused on science and innovation.
- Attracting and training more than 300 new highly qualified personnel (grad students, technicians, knowledge workers, business managers, etc.) in key strategic R&D areas.
- Attract and establish nationally and internationally recognized scientific leaders in key strategic R&D areas.
- Creating 125 products/processes and attract 70 new companies, utilizing intellectual property generated by the agricultural R&D System.

The Alberta Agricultural Research and Innovation Strategic Framework (ARIF) will position Alberta well to deliver upon the $20/$10 Billion growth targets. For more information, the complete ARIF is included in the Appendix C on page 131.

Governance of Alberta's Agri-Food R&D system

A key component toward addressing the issues and challenges in the agricultural R&D system is leadership and governance. A new leadership and governance model has been developed for the system according to Figure 2 below. The key shift and foundation of the new governance model is one that is innovative, collaborative and inclusive. The priority is to accelerate the collaboration and strategic alignment emerging in the current system, and to expand new collaborative models among agriculture R&D funders and other stakeholders throughout the R&D continuum. This model creates a strategic approach for research and funding capacity in Alberta, ensuring that the R&D needs required to drive our agricultural industry's future are identified and are met through strategic investment portfolios.

Figure 2 — **Provincial Agriculture Research & Innovation System Governance Model**



The model includes several key components including strategic networks and the Funding Consortium. Strategic Networks are constituted of representatives from the R&D continuum — basic research through to technology transfer to the ultimate use of the knowledge, technology, and/or products. The Strategic Networks, and other mechanisms as required, will identify key R&D opportunities and priorities for Alberta's agricultural industry. This process of information development and sharing, direction and priority identification will result in the alignment of capacity toward science and technology products and knowledge that is critical to achieving the economic, social and environmental goals of the agricultural industry.

Four Strategic Networks are being developed. These include the following.

- Value-Added Food and Health Products
- BioProducts Alberta — established in April 2003
- Sustainable Production — Livestock
- Sustainable Production — Crops

Representatives on each Strategic Network will include industry — from producers throughout the value chain to the marketplace, non-government organizations, commodity organizations, Federal and Provincial governments, R&D and commercialization members and representatives from other sectors, as necessary.

In 2001, six public agricultural R&D funders, AARI — Alberta Agricultural Research Institute, ACIDF — Alberta Crop Industry Development Fund, ALIDF — Alberta Livestock Industry Development Fund, DLFOA — Diversified Livestock Fund of Alberta, AVAC Ltd., and CARD — the federally funded Canadian Adaptation and Rural Development Fund administered by the Agriculture and Food Council in Alberta, collaborated to form the Agriculture Funding Consortium. The Funding Consortium works together to direct funding toward specific strategic priorities, and through the new governance model, increased system productivity, efficiency, investment and accountability will result. One of the greatest benefits the Funding Consortium brings is the ability to provide critical mass in supporting Alberta's strategic R&D priorities, while simultaneously honoring the specific mandates of each individual funding organization. The Consortium will continue to evolve and expand to include other critical funders in the R&D continuum including the other Life Sciences areas, sector funders (Alberta Ingenuity Fund, Alberta Heritage Medical Research Foundation) and others.

The Funding Consortium will work with the R&D performers to direct significant investment to the opportunities and priorities identified by the Strategic Networks, and to align these initiatives with Alberta's technology transfer/innovation/commercialization capacity.

Under the new governance model, linkages among the various stakeholders of the R&D system will be more closely aligned, resulting in more multi-disciplinary, cross-sectoral programs and projects, and more multi-institutional linkages. It will also require science to be more closely linked with industry needs and economic opportunities for the growth and sustainability of the agriculture and food industry. The governance model will ensure that Alberta's R&D system is aligned with industry needs and growth opportunities, has strong leadership, is well-resourced, provides for commercial opportunities, and is well recognized provincially, nationally and internationally.

Agriculture Policy Framework (APF)

From August 2000 to June 2003, Alberta has also actively participated in discussions and negotiations with the Federal Government and other provinces that led to the signing of the new five-year National Agriculture Policy Framework (APF). The inclusion of a chapter for science and innovation in the APF is a key step for identifying the challenges and opportunities in R&D. The chapter allows for the development of concrete measures that the Federal and Provincial governments will undertake to deliver on their common goals. The measures are consistent with the Alberta Agricultural Research and Innovation Strategic Framework (ARIF).

The Science and Innovation chapter places significant emphasis on the R&D continuum, especially the technology transfer component. Alberta will provide a contribution for activities that will facilitate the transfer of research results and innovations into new economic opportunities for the agricultural sector, including food and bio-products. Specific initiatives may cover knowledge and technology transfers, mentoring for success, value-chain development, product and business incubators, process improvement and scale up, pilot testing, and commercialization.

The APF Implementation Plan describes activities and expenditures relating to Science and Innovation. The APF and related documents are available from AAFRD and on the AAFRD website **(www.agr.gc.ca/cb/apf/index_e.php)**.

Identification of Research & Development Priorities

As outlined in the new governance model introduced through the ARIF, Strategic Networks have been developed to assist in identifying R&D priorities for the agricultural industry. These Networks will focus in four areas of the agricultural industry:

- Value-Added Food and Health Products
- Bio-Products
- Sustainable Production — Livestock
- Sustainable Production — Crops

Preliminary investigation by the Networks has resulted in the identification of key R&D opportunities and priorities. They are outlined in the table below.

Value-Added Food and Health Products
• Crop-based food, food ingredient and fermentation products • Agri-based health, therapeutic and wellness products • Value-enhanced fresh and processed meats and co-products
Bio-Products
• Bio-materials (bio-polymers, fibres and bio-composites) • Bio-energy/fuels, co-generations and by-products utilization • Bio-chemicals (lubricants, cosmetics, resins and industrial chemicals)
Sustainable Production Systems
Interaction of Agriculture with Water, Soil and Air Resources • Enhanced water, soil and air management — systemic approach • Climate change and amelioration technologies
Crop Opportunities • Crop and crop products value-added and diversification • Strategies for disease and pest management • Nutrient efficient cropping systems • Food safety
Livestock Opportunities • Meat quality influenced by genetics and production management • Animal welfare and care • Animal health-strategies for prevention and control of diseases • Animal genetics and proteomics applications for animal health and meat quality • Food safety
Economics, Marketing & Social Sciences — overarching theme applying to all areas
• Marketing, policy and regulation • Competitive intelligence • Consumer behavior, rural enhancement and development

These opportunities and priorities are well aligned with *Growing our Future: An Integrated Life Sciences Strategy for Alberta*, the *Sustaining Tomorrow's Prosperity Strategy* and the *Draft — August 2003 Alberta's Agri-Food Industry Growth Strategy*.

The *Draft — August 2003 Alberta's Agri-Food Industry Growth Strategy* identifies a number of areas where R&D efforts will need to be focused in order for the industry to meet their growth targets. They include:

- Development of new feed options, environmental practices and processing technologies for beef and pork production and processing.
- Development of new product and processing technologies for processed meats and ready meals.
- Increase utilization of crops for functional food and nutraceuticals.

Under the leadership of AARI and the Funding Consortium, resources will be focused on the priority areas, and R&D priorities will be aligned with industry and public needs. The Funding Consortium has developed a balanced investment portfolio approach to ensuring that the key priorities for R&D are captured and can move forward in a timely and effective manner. Focusing on strategic priorities will also provide clear direction for building human resources, infrastructure and innovation capacity.

In 2003, a Memorandum of Understanding (MOU) was signed between the University of Alberta, the Alberta Research Council and AAFRD that created the Institute for Food, Agri-Industrial and Agricultural Sciences, Alberta (IFAASA). The memorandum is an example of the collaboration and efficiency that can be gained when strategic priorities become the focus for R&D. These three R&D performing organizations will pool their resources, staff, and facilities, valued at over $750 million to collectively manage and deliver agriculture, agri-food and agri-industrial research, development and educational programs. The work that will be done at IFAASA will cover the entire R&D continuum from basic and applied research through to technology development and transfer to application and commercialization.

Policy and Regulatory Support for Diversification

Alberta constantly reviews its policies and regulations to ensure that they support crop and livestock diversification. Policies and regulations have to be legally and socially acceptable, economically sound and in the best interest of the industry and Alberta.

It was recognized that capitalizing on opportunities identified by the Strategic Networks and in the Agriculture Growth Strategy will require changes in Alberta's policy and regulatory framework. These changes are needed to continue to encourage diversification, especially as new industries are created and in order to facilitate long-term sustainable growth in established sectors of the agricultural industry. Certain regulatory changes that are required are under Federal jurisdiction so Alberta will continue to work closely with Federal agencies in these circumstances.

The Strategic Networks also identified several R&D opportunities and priorities that directly relate to policy and regulation. Economics, marketing and the social science aspects of the agricultural industry will also be examined through any R&D program conducted in Alberta under the new Framework.

Further Development of the Technology Transfer System

The role of the Strategic Networks to identify opportunities and priorities is not restricted to research; opportunities and priorities will also be identified for development and commercialization. This will ensure that there are clear linkages in the R&D system spanning from basic research to technology transfer to successful commercialization and/or adoption of new information/practices.

Previously, the Funding Consortium only focused its joint investments in the area of research. However, over the past year, the Consortium has expanded its focus to include the entire R&D continuum. Funding agencies such as the Industry Development Funds (Crop, Livestock and Diversified Livestock) along with AVAC Ltd. (a not-for-profit company that develops value-agriculture opportunities in Alberta) have been instrumental in investing in technology transfer initiatives that move the research further down the continuum to the producer and/or the commercialization process. Having the funders in Alberta working together to jointly fund science right from basic to discovery to pre-commercialization is a tremendous benefit. The linkages that have occurred have already resulted in some preliminary successes including the Conjugated Linoleic Acid (CLA) Initiative that is focusing its efforts on basic understanding CLA as a fatty acid to trying to understand consumer's interest in CLA-enriched products

AAFRD and AVAC Ltd. have signed a Memorandum of Understanding in September 2002 to initiate the Alberta Agriculture and AVAC Liaison Program. Partnerships like this Liaison Program will help ensure that producers have easy access to financial assistance that will allow them to capitalize on value-added opportunities. This will increase the number and quality of investments in the agri-food sector and will be a major outcome for the Program. An additional benefit is that team members will improve their knowledge and skills in the area of new product commercialization. Liaison team members in the program will also coach and train other AAFRD staff working with potential AVAC Ltd. clients.

The Agri-value Processing Incubator, which was announced on April 30, 2003, will be built beside the existing Food Processing Development Centre (FPDC) in Leduc Alberta. The Incubator will complement the work being done at the FPDC, as it will give Alberta's emerging entrepreneurs the resources they need to succeed in the market. The Incubator will provide dedicated production facilities, business-planning guidance and access to industry expertise. It will also house the Centre for Agri-industrial Technology (CAIT) which is a research centre that focuses on non-food use of agricultural commodities. The work done at CAIT aligns with the global trend toward utilizing agricultural products to manufacture nutraceuticals, industrial and health-care products.

Science-based Food Safety Practices

International food safety and fair practices in trade standards — that Canada supports along with all members of the World Trade Organization (146 members worldwide) — are generated by consensus of the Codex Alimentarius membership (165 members worldwide). The Code Alimentarius Commission, which is a joint effort of the Food and Agriculture Organization and the World Health Organization, establishes these standards. The Federal government implements these standards through the Canadian Food Inspection Agency. Alberta has supported the Federal Government in setting these international standards.

Alberta and the rest of Canada are recognized for the high quality and safety of the food they produce. To maintain and enhance this reputation, Alberta assists the Federal government, where possible, to maintain standards and provide risk assessments of perceived hazards.

The Strategic Networks have identified food safety as a key priority for R&D. AARI and members of the Funding Consortium continue to work with the R&D community to build leading-edge initiatives in food safety. Significant investments have been made over the past three years in the areas of meat safety, food preservation processes and technologies, and *E.coli* 0157:H7 and other food-borne pathogens. Work in these areas as well as other emerging concerns in food safety will continue to be a priority for the R&D System.

The University of Alberta, in cooperation with AAFRD and other partners, has committed to build a $17 million facility for agri-food R&D. This facility, Agri-Food Discovery Place, will be built in two phases. The first phase will house a centre for research on meat safety and meat products. The second phase will be a crop utilization research centre that will allow scientists to create high value components and concentrated for non-food industrial, novel food, and functional food applications. Phase two will also house research on bio-plastics and bio-fuels that are created from plant products.

Tomorrow's Actions

Alberta is committed to developing a strategic, efficient agricultural R&D System that lays the foundation for the province's growth. It is evident that the System needs to have clearly defined priority areas for R&D and has a structure in place to assist in the identification of these priorities. The Strategic Networks that have been developed will be effective in identifying priorities in the following four key areas:

- Value-Added Food and Health Products
- Bio-Products
- Sustainable Production — Livestock
- Sustainable Production — Crops

Greater collaboration between the R&D performers along with the Funding Consortium (and other funders) will ensure that high quality initiatives in these four areas will be created. The Funding Consortium has developed a portfolio investment approach that spans across the R&D continuum — from basic discovery research to successful technology commercialization that delivers products to consumers, product sales, knowledge transfer and economic growth.

It is essential that an effective policy and regulatory environment support the R&D initiatives in the key priority areas. Policy and regulatory changes will be required to guide discoveries for the new emerging industries within the changing agricultural sector.

R&D will continue to play a vital role in Alberta's economy. It is the foundation for growth — growth that results from having sustainable production practices, leading edge food safety technology, crop and livestock products and traits that are market-driven, and the ability to adapt to ever changing markets and climate. R&D will also lead the way for agriculture to become an even greater partner among the life sciences. Agriculture plays an integral role in our health and nutrition, the changing energy economy toward bio-based products, the ever-changing environment that requires effective management of our air, water and soil, the growing opportunities to create agricultural-based building products, and numerous other opportunities that will be there tomorrow. R&D is the answer to addressing these challenges and turning them into opportunities for Alberta.

Marketing Choice

Two teams, the Alberta Farmers Have Marketing Choice Action Team (Marketing Choice Action Team) and the Competitiveness in a Global Market Action Team, addressed the issue of a lack of marketing choice for Alberta wheat and barley farmers. They identified this lack of choice to be due to the Canadian Wheat Board's single desk selling mechanism that dictates that all wheat and barley produced in Western Canada for domestic human consumption and all wheat and barley for export must be sold through the Canadian Wheat Board (CWB). The CWB operates under the Canadian Wheat Board Act (the Act), which was last amended in 1998.

The Marketing Choice Action Team stated that "the current mandatory wheat and barley marketing system stifles entrepreneurs, constrains innovation, hides inefficiencies, masks comparative advantage, limits flexibility and impedes investment in value adding." Western farmers are allowed to market their canola, peas, oats etc. to any buyer but they cannot market their wheat and barley on their own (except to the Canadian feed market) without going through the CWB. For example, farmers who want to deal directly with processors (e.g. a pasta plant) or form their own cooperative to process their own grain cannot do so without entering into the CWB system. On a very local scene, a farmer living across the road from a flour mill can not sell his wheat to the mill, nor can the miller source his product from the farmer. The farmer must sell his wheat to the CWB and the miller must buy the wheat from the CWB. Many farmers and processors say this system results in extra charges, time delays and loss of product identity. If a farmer finds a market for feed barley in the United States (U.S.) he cannot deal directly with that buyer without going through the CWB system. If a farmer were selling canola, oats or peas, he could deal directly with the USA. An Ontario wheat farmer could also deal directly with a grain buyer or processor; Ontario is not part of the federally legislated 'designated area' over which the CWB has marketing jurisdiction. An Ontario producer can easily get an export license from the CWB to sell wheat into the United States, but a western farmer cannot.

The Marketing Choice Action Team recommended that Alberta negotiate change with the federal government to make the CWB a voluntary marketing agency in Alberta. The Team said that implementation of the Ag Summit recommendation will require change to federal legislation or direction from the Minister Responsible for the CWB, or both. The Team noted that on February 27, 2002, the Auditor General of Canada, in her official press conference, said that the mandate and role of the Canadian Wheat Board, in particular its role as a monopoly seller of wheat and barley, is an area of government policy.

Ag Summit Recommendations

The Marketing Choice Action Team summed it up best when they defined their goal to be "Alberta farmers and agribusiness may choose to sell their wheat and barley to anyone and into any market, including the Canadian Wheat Board (CWB), without penalty." They identified three recommendations.

1. The province of Alberta insists that the federal government make legislative changes immediately to make the CWB a voluntary marketing agency in Alberta.
2. In the event that the recommendation to make the CWB a voluntary marketing agency is not achieved immediately, the province of Alberta should implement an offset program or a "Made in Alberta Solution" to counter federal policy.
3. The province of Alberta should continue to advocate for moving the Canadian Wheat Board transportation responsibilities to "spout at port" location.

Yesterday's and Today's Actions

The Alberta government agrees that the lack of marketing choice for wheat and barley prevents Alberta producers and processors from utilizing their entrepreneurial skills and taking full advantage of market potential. In the February 18, 2003 Speech from the Throne, the Honourable Lois Hole, Lieutenant Governor, stated, "[the government] will continue to oppose the monopoly of the Canadian Wheat Board (CWB) and advocate for marketing choice for Alberta wheat and barley producers."

A core business of Alberta Agriculture, Food and Rural development (AAFRD) is to "Facilitate Industry Growth." The Ministry contributes to the goal of "Growth of the Agriculture and Food Industry" in a number of ways, including "advocate policies and programs that facilitate market access, industry growth and competitiveness." In the case of the CWB there is on-going advocacy for changes to the CWB Act and the related CWB regulations, policies and programs. A number of actions relating to the Action Team's three recommendations are underway. The activities are summarized here.

Make the CWB a Voluntary Marketing Agency

In December 2002 the Alberta Legislature passed Private Member's Bill 207, the *Alberta Wheat and Barley Test Market Act*. The Bill authorizes the Minister of Agriculture Food and Rural Development to enter into an agreement with the federal government or the Canadian Wheat Board (CWB), or both. The agreement is to establish an open market, on a test basis, for the purchase and sale of wheat and barley produced in Alberta. In this open market, farmers could sell their wheat and barley to any buyer, including the CWB. The test market will be implemented, after an agreement has been reached, and will be in place for a minimum of ten years.

Following the passage of Bill 207 the Minister launched a pro-active strategy to pursue marketing choice for Alberta farmers as soon as possible. Strategies include:

- Designing and describing a test open market as envisaged under Bill 207
- Negotiating with the federal government on the design and implementation of the test open market
- Examining various avenues to challenge federal legislation
- Encouraging farm and industry groups to put pressure on the federal government for marketing choice
- Challenging the CWB at every opportunity to demonstrate its value and accountability to Alberta producers of wheat and barley

- Working with other like-minded provincial governments to build a convincing case for fundamental policy change.

Besides Bill 207 (the Alberta Wheat and Barley Test Market Act) the Government of Alberta continues to advance the marketing choice option for Alberta wheat and barley producers in intergovernmental forums such as Premiers' meetings and federal and provincial ministerial meetings. In addition, in meetings with their federal counterparts, Alberta ministers and senior officials, are outlining the advantages of marketing choice.

"Spout at Port"

The Alberta government notes that the Ag Summit recommendation pertaining to "to spout at port" is consistent with Arthur Kroeger's[1] 1999 recommendation to the federal government where he stated, "consistent with the concept of the Board as an export agency, it should assume custody of the grain only when it is loaded on board a ship ('at spout')." However, this recommendation was not adopted.

Moving the CWB's "transportation responsibilities to spout at port location" would involve reducing the involvement of the CWB in inland grain transportation and handling activities. Currently, Alberta Transportation is pursuing activities to reduce this involvement. Some of their actions follow.

a. During the Canadian Transportation Act Review, Alberta Transportation recommended that the grain companies be designated as the shipper of record rather than the CWB. Unfortunately, the federal government did not act on the recommendation. Instead, the Memorandum of Understanding between the federal government and the CWB made the Board the official shipper of record for the first time. This change limited the rights of grain companies in dealing with carriers and enhanced the position of the CWB.

b. Alberta Transportation is focusing its attention on improving competition within the rail transportation sector and providing highway infrastructure that improves system efficiency. The Department has continued to invest in the provincial highway system so it can accommodate large trucks in all seasons. The department has also made significant investments to allow safe access to many new high throughput grain elevators. To improve competition among rail carriers (which would become critical if the revenue cap is removed), Alberta Transportation has made submissions to the Canada Transportation Act Review calling for improvements to the competitive access provisions.

Tomorrow's Actions

The current focus of the provincial government is to negotiate policy change with the federal government, so that Alberta producers will have marketing choice as soon as possible.

Implement an offset program

In the event that negotiation is not successful within a reasonable period of time, the Alberta government will investigate other strategies to achieve marketing choice. The offset program is an example of such a strategy. An example of an offset program is the old Alberta Crow Benefit Offset program. It was designed to offset harmful federal transportation policy and leverage policy change, and it ultimately contributed to the growth of Alberta's livestock industry.

The Ag Summit Team viewed an offset program as a means to offset the "inefficiencies" or "distortions" caused by the mandatory marketing system. An offset program does not solve the problem but attempts to diminish, counterbalance, or compensate for discriminating policies or procedures. The offset program concept is being investigated as one contingency plan option in the event that an agreement cannot be reached with the federal government.

[1] Arthur Kroeger was appointed by the federal government to work with industry stakeholders, including producers, and prepare recommendations on the changes necessary to implement a grain handling and transportation reform package.

Financial Reforms

Through the Ag Summit process, several recommendations to change the federal and provincial taxation provisions were made. The Action Team on Taxation developed most of the recommendations. Their primary goal was to recommend various tax measures that "could be viewed as fiscally responsible towards a more healthy and competitive business climate in the province — one with reduced forms of government grants and subsidies." The team was concerned that "While Alberta's tax mix and levels of taxation continue to stack up favorably to that of most other Canadian jurisdictions, pressures are mounting globally as many countries are enticing business, investment and skilled workers to relocate with the incentive of paying less tax."

The Long-Term Farm Profitability and Sustainability Action Team commented on financial sustainability and growth in the primary sector. It stated "for agriculture to be sustainable it must be profitable" and "risk mitigation tools are a must." The Attract Equity Financing to Primary Agriculture and Agri-Industry Action Team and the Infrastructure in Rural Communities Action Team were also concerned with tax issues.

Ag Summit Recommendations

The overall thrust of the Ag Summit recommendations related to taxes and enhanced safety net programs was to make the Alberta agri-food industry more competitive in relation to other jurisdictions. Specific Ag Summit recommendations were grouped under broad headings since several deal with similar subject matter. The headings are:

- Property and Education Taxes
- Corporate Taxes
- Personal Income Taxes
- Fuel taxes
- Tax Changes to Promote Investment
- Risk Management Program Design Criteria

Yesterday's and Today's Actions

Since 1993, Alberta's fiscal policies have been founded on the principles of fiscal responsibility and accountability. Budget 2003 reiterated the government's commitment to these principles, stating that balanced budgets will continue to be the law in Alberta and the legislated debt elimination schedule will be met. One of the foundations of this approach has been the government's commitment to a broad based, low rate tax regime. Rather than favoring certain individuals and sectors with tax preferences, when the fiscal room is available, Alberta has chosen to cut overall taxes. It does not pick winners or losers with the tax system, nor does it expect the broader economy to bear the cost of special tax treatment provided to select groups.

Individuals and businesses within the province have benefited from this approach. Alberta has the lowest overall taxes in Canada and is only province with a single-rate personal income tax system and the only province that does not have a retail sales tax. Alberta has no corporate capital tax, the lowest fuel tax in Canada and among the lowest education property taxes. Low overall taxes mean more opportunities for Albertans, greater rewards for our work and investment and more wealth to support the public services and quality of life we enjoy.

Some Ag Summit recommendations propose reductions in government revenue sources with broad application to all government sectors, not just agriculture, therefore they must be considered within the context of the fiscal plan.

Property and Education Taxes

Municipalities are permitted to impose tax on property within their boundaries to finance their operations. This accounts for about half of the property taxes paid. Municipalities also collect the education property tax on behalf of the province.

The property tax base in Alberta has always contributed towards education financing. Until 1994, individual school boards advised their municipalities what they needed in revenue. The municipality computed the necessary mill rate, imposed and collected the tax and remitted it to the particular school board. By the early 1990s, it had become evident that the economic disparities between municipalities were resulting in significantly different educational opportunities. Richer municipalities were able to collect more tax with lower rates and provide students with resources and options not available in less advantaged areas.

In 1994, the province assumed responsibility for collecting all education property taxes and distributing the revenues to school boards. With the exception of five national park municipalities, which have lower tax rates, the same provincial uniform education property tax rate is applied to assessment in every municipality. The monies raised are distributed on an equal per student basis across the province.

Since 1995, education tax rates have declined and the education property tax on electric power systems and machinery and equipment has been eliminated. As a result, the proportion of basic Kindergarten to grade 12 education financed through property tax has been reduced from over 50 per cent in 1994 – 95 to about 36 per cent in the 2003 budget. Alberta's uniform education property tax rates remained unchanged from 2002 to 2003. This freeze followed a major 17 per cent cut in rates in 2001 and an additional 1 per cent reduction in 2002. The 2003 freeze makes 10 straight years that the government has either reduced or frozen its education property tax rates.

There are several ongoing issues with education property tax. The Ag Summit recommendations echo the concerns most frequently raised by the public. Ongoing government actions dealing with Ag summit recommendations in this area follow.

Equalization of the Residential and Non-Residential Education Property Tax Rates

The provincial education property tax rates for 2003 were set at $5.57 per $1,000 of equalized assessment for residential and farm property and $8.17 for non-residential property. The province is not reviewing this rate differential. One reason non-residential property is charged a higher rate is because property tax is considered a business expense and is a deduction in calculating taxable income. The rate differential

helps ensure that industry and commerce contribute to the education of tomorrow's workforce.

As noted above, the provincial rates applied to both categories have declined by nearly 24 per cent since 1995. Non-residential rate reductions are made in direct proportion to the reductions in residential and farm property rates.

Municipal Property and Business Tax Levels

The issue of municipal financing is getting more attention. The review of this issue is ongoing. Any consideration of the issue must take into account the fact that taxes are ultimately paid by individuals. A reduction in taxes in one area must be offset by increased fees and taxes in another if total spending does not change.

Alberta Municipal Affairs is encouraging municipalities to work together with other municipalities to develop partnerships that will help to alleviate the fiscal pressures they are facing. Through its Municipal Sponsorship Program, Alberta Municipal Affairs provides limited funding for municipal projects that promote innovation, cooperation and excellence in local government to small and medium-sized municipalities. Alberta Municipal Affairs has also developed the Regional Partnership Program. This program encourages and supports regional arrangements for a broad spectrum of purposes that involve groups of at least three partner municipalities and possibly other organizations in the public and private sector. Those that enter into these partnerships are eligible for conditional grants.

The province provides municipalities with a variety of grants. Budget 2003 implemented a new capital framework and capital account to provide an additional source of financing for capital grants to local authorities and other infrastructure support.

Removal of Education Financing from the Property Tax Base

The inclusion of an education component in property tax is questioned on a regular basis, with opponents stating that education should be funded by income, rather than property taxes. There are no plans at this time to eliminate education property taxes. The revenue collected from school property taxes helps to fund Albertans' priorities in kindergarten to grade twelve education.

All provinces except Newfoundland fund at least a portion of education expenses through property tax. Alberta has used property taxes in this manner every year since it became a province. Although the relative portion of total education costs funded through property taxes has shrunk dramatically since the 1950s, there are still important reasons why Alberta continues to use property taxes to fund education:

- Property taxes are relatively stable compared to other taxes, and provide a dependable source of funding for education.
- Using a mix of taxes promotes stability and reduces the ability of taxpayers to avoid taxation.
- Eliminating school property taxes means that the revenue would have to come from somewhere else. Increases in corporate or personal income taxes are likely to be more damaging to the economy than the existing school property tax.
- Property tax is a measure of wealth and ensures that people, who may be paying low amounts of income tax as a result of financial planning, contribute a fair share towards the cost of education.

Corporate Income Tax

The Alberta Business Tax Review Committee was struck in 2000 to examine the impact of Alberta's business taxes on the provincial economy, business climate and international competitiveness. It was asked to make recommendations to improve Alberta's competitive position, both inter-provincially and internationally. The Committee concluded that substantially lower business taxes were essential to accomplish this, especially in the face of worldwide trends to lower corporate income taxes and the increasing mobility of capital and highly skilled people.

Reduction of Corporate Tax Rates

The government accepted the Alberta Business Tax Review Committee's recommendations to reduce the general corporate rate to 8 per cent, the small business rate to 3 per cent and to raise the level of income eligible for the small business deduction to $400,000. In Budget 2001, it implemented a business tax plan to phase in corporate tax rate reductions in a manner that would be both affordable and sustainable.

At the end of 2000, Alberta's general corporate tax rate was 15.5 per cent, the manufacturing and processing rate was 14.5 per cent and the small business rate 6 per cent on the first $200,000 of active business income. In addition, financial institutions paid tax of 1 per cent on their taxable capital used in the province. Under the business tax plan, the first tax reductions were effective April 1, 2001. They included the elimination of the financial institutions capital tax and a reduction in the capital gains inclusion rate from two-thirds to one-half.

We have come a long way towards meeting the long-term objectives under the business tax plan. Effective April 1, 2003, the general rate is 12.5 per cent, the small business rate 4 per cent and the threshold is $400,000. This represents reductions of almost 20% in the general rate and 33% in the small business rate since 2000. The small business income threshold has been doubled over the same period. Alberta's general and small business rates are the second lowest in the country. Alberta businesses also benefit because they do not have to pay the province general capital taxes, payroll taxes or sales taxes on business inputs. Overall, Alberta has the lowest taxes in Canada. Recent commentators have stated that it is the one Canadian tax regime that is truly internationally competitive.

Budget 2003 indicated the government's intention to further reduce the general and small business rates in 2004 to 11.5 per cent and 3 per cent respectively. Implementation of these reductions will complete the government's commitment with respect to small business taxation and moves the government closer to our long-term goal of an 8 per cent general rate. Further cuts to the general rate will be made as they become affordable.

Personal Income Tax

Alberta's personal income tax regime has undergone significant change since 1998, going from a top combined federal/provincial marginal rate of 45.6 per cent in 1998 to 39 per cent in 2003. In 2001, the basic structure of the Alberta Income tax changed from a "tax on tax" (i.e. provincial tax computed as a percentage of federal tax payable) to a "single-rate tax on income" (i.e. provincial tax is calculated as a percentage of taxable income) system. Fairness was

increased through equalizing and enhancing the basic and spousal exemptions.

In addition, the Alberta Family Employment Tax Credit was introduced in 1997. This provides low and middle income working families with up to $1,000 for their first two children.

Alberta's low single-rate income tax, combined with the lack of a retail sales tax, no general payroll tax, the lowest fuel tax in the country and low property taxes, ensures that Albertans pay the lowest overall taxes in the country. In fact, Albertans have saved more than $1.5 billion over what they would have paid had the 1998 tax regime remained in place.

Budget 2003 does not include further reductions to the personal income tax rate of 10 per cent in any of the next three years. However, provincial non-refundable tax credits are fully indexed to inflation so that their value to taxpayers is not eroded over time. Albertans will pay about $130 million less in personal income taxes in 2003 as a result of the indexation introduced in 2001.

Fuel Taxes

Under both federal and provincial law, individuals and business generally pay fuel taxes in respect of every liter of fuel they purchase. Alberta imposes fuel taxes at the rate of 9 cents/litre for gasoline and diesel and 6.5 cents/litre for propane. However, the cost of fuel use in farm vehicles is reduced for farmers through the Alberta Farm Fuel Benefit Program. This two-part program provides farmers with exemptions from the three fuel taxes noted above. The Farm Fuel Distribution Allowance component of the program provides farmers with an additional grant of 6 cents/litre on diesel fuel used for farm equipment. In comparison, there are no special provisions for farmers under federal law.

Tax Changes to Promote a More Attractive Investment Climate

The recommendations in this section are intended to promote a more attractive tax environment for investment in agriculture. They call for enhanced rollover provisions for farmland to allow for rollover to eligible agri-businesses, the inclusion of owner-controlled agri-businesses in RRSPs, and the same flow-through treatment in respect of agri-investment that is available to other industries. Their nature is such that they would have to be implemented by the federal government and then paralleled by Alberta and the other provinces. They cannot be effectively implemented by the province alone.

Deferral of Tax on Disposition of Farm Property

There are a number of ways in which a farmer could dispose of farm property on a tax deferred basis. With the ability to transfer tax free to children and the capital gains exemption on qualified farm land, the tax system already provides more favorable capital gains treatment for farm property than for other property.

The federal income tax act prescribes the tax laws pertaining to farm transfers. Canadian income tax law currently provides for a tax-deferred transfer of farm property by a farmer to his children, grandchildren or great grandchildren. The deferral is allowed if the property is located in Canada and the land is used in farming by the landowner himself, his spouse or any of his children. To qualify for a full tax deferral, the property must be transferred at or below its tax value. The farm can, therefore, be given to the child free of charge or for any amount up to the tax value, without triggering any capital gains, recapture or other income. While these values could be considerably less than market value, particularly if the property had been owned for a number of years, with these types of transfers, the owner's proceeds are limited to the transfer amount.

Should the farmer want additional proceeds, an alternative rollover provision could be used to transfer the farm at any amount between tax value and fair market value. This increases the proceeds to the landowner, allows him to utilize the $500,000 capital gains exemption ($250,000 taxable capital gain) on the sale of qualified farm property, and maintains the rollover treatment on the remaining gains between the disposition price and the actual fair market value.

Canadian tax laws also provide for a tax deferral on the rollover of property to a corporation or partnership. Essentially, the property can be transferred at any value between tax cost and fair market value provided that share consideration (or partnership interest) is received and the value of non-share consideration (or partnership interest) received does not exceed the cost base of the transferred property.

Inclusion of Shares of Agri-businesses in RRSPs

Shares of a Canadian controlled private corporation with at least 90 per cent of its income earned from an active business may be held in an RRSP. Shares of public companies and companies listed on prescribed stock exchanges may also be held in an RRSP. These provisions appear to be broad enough to encompass the shares of most agri-businesses.

There are restrictions on shareholdings in an RRSP in respect of corporations controlled by the RRSP holder or a related individual or corporation. An individual cannot use his RRSP to hold shares of a corporation in which he or other related parties hold 10% or more of its issued share capital. As these rules are generic in nature, the federal government would likely want any changes that were made in respect of agri-business owners to apply to all small business owners.

Flow-through Shares for Agriculture

Flow-through shares have special income tax attributes, implemented under federal income tax law. Under the Income Tax Act (Canada), the use of flow-through shares is restricted to resource companies. Any changes to allow these shares to be used by the agri-food industry would have to be made by the federal government.

Tomorrow's Actions

The Alberta government recognizes the importance and implications of its tax policies. Unlike most of the other provinces, the combined federal/provincial corporate tax regime in Alberta is competitive in the global market place. However, while tax systems should be stable, they must also be responsive. Taxes must be continually reviewed to ensure they provide government with sufficient revenue and reflect current conditions. At the same time, they need to be reasonably comparable to regimes elsewhere in the world to ensure that business in the jurisdiction is competitive from a global perspective. The review of the Ag Summit recommendations related to taxation form an important part of this ongoing process.

Many of the recommendations proposed reductions to government revenue sources. Budget 2003 estimated that revenue from all taxes and crop and hail insurance premiums will total $10,026 million in 2003 – 04, or 45.7 per cent of total revenue. With the anticipated decline in conventional royalties, this percentage is estimated to climb to 48.7 per cent by 2005 – 06. In other words, the level of these revenues has a significant impact on Alberta's ability to finance the services and programs Albertans have come to expect and to avoid annual deficits.

The following are the actions that address the Ag Summit recommendations related to risk management. For context purposes the future changes to the tax regime were discussed in the Yesterday and Today's Actions.

Risk Management Design Criteria for Agricultural Programs

The Business Risk Management Chapter of the Agriculture Policy Framework has two components, an enhanced Net Income Stabilization Account (now called the Canadian Agricultural Income Stabilization or CAIS Program) and changes to production (excluding crop) insurance programs. Specific Ag Summit recommendations on Risk Management Design Criteria are addressed in Table 1 (attached).

Old Net Income Stabilization Account

Introduced in 1991, the Net Income Stabilization Account (NISA) program was developed jointly by producers, provincial governments and the federal government. Available to individual farmers on a voluntary basis, the program was designed to help them achieve long-term farm income stability.

Under the program, farmers made contributions to a NISA account. Government matched the farmer's contributions, paying the money to a second account. In addition, government paid interest on both accounts. Farmers could apply to make withdrawals from these accounts any time their gross margin from farming was less than their five-year average gross margin. Gross margin was a broadly defined term, but was essentially revenue less most farm expenses. Expenses such as interest, property taxes, capital cost allowance and land clearing and rental costs were excluded from the calculation. The government account had to be depleted before withdrawals could be made from the farmer's contribution account.

While government payments under the program vested in individual producers, producers proved reluctant to draw down these funds in lean years. Funds were left in the program, accruing interest, until the producer exited the program, often upon retirement, at which time the matching government funds were withdrawn.

The Canadian Farm Income Program (CFIP) was designed to complement NISA. It provided support to producers who were actively farming in Canada, when circumstances beyond their control resulted in an extreme reduction in their farm income.

New Stabilization Program

The new Canadian Agricultural Income Stabilization (CAIS) Program combines the concept of income stabilization under the old NISA program with the concept of disaster mitigation offered under the Farm Income Disaster Program (FIDP) in Alberta. By combining the two programs with a common margin contribution and withdrawal base, farmers will be able to determine the particular level of individual risk protection that they wish to cost-share with the provincial and federal governments.

The CAIS Program is based on a whole farm contribution based margin instead of a gross margin. Eligible expenses for purposes of computing the new contribution margin will include only direct production costs and exclude a number of the non-production expenses such as building repairs, marketing costs and accounting fees that reduced the gross margin under the old NISA and FIDP programs. This change will increase the level of coverage, thus increasing the income support base. The new program is designed to deepen and broaden farm stabilization capacity (including disaster mitigation), and it will also result in a reduction of income support elements.

Specifically, CAIS provides producers with varying levels of income support dependent upon income loss experienced. Income loss will be determined by comparing contribution in the current year to the Olympic average contribution margin for the last five years (the high and low year numbers are dropped, leaving the three median years in the average calculation). Government will pay 50 per cent of support where the contribution margin is 85 per cent to 100 per cent of the Olympic average for the year. It will pay 70 per cent where the margin is 70 per cent to 85 per cent of the average and 80 per cent where it falls below 70 per cent.

To provide more for targeted assistance and affordability, government funds will be consolidated rather than assigned to individual producers and the interest bonus eliminated. Funds will be paid to individual producers upon application to the program and where a loss position has been experienced.

Crop Insurance

CAIS Program provides a comprehensive income stabilization and disaster program with crop insurance to provide support to cover negative contribution margins. Negative contribution margins usually occur when there is a substantial reduction in yield — which is the basis for the crop insurance coverage. The federal and provincial governments will not cover negative margins under CAIS Program, so crop insurance options have been enhanced. Alberta Crop Insurance now incorporates a number of new features to the existing program specifically to provide producers with a variety of cost-effective strategies to manage their risk. These options are the Spring Price Endorsement, Revenue Insurance Coverage, Variable Price Benefit, Silage and Greenfeed Insurance, and Enhanced Risk Area Production levels. These options essentially give farmers the choice to protect swings in market prices to their insured production levels and give a proxy insurance coverage for silage and green-feed.

In summary, the CAIS Program, combined with Crop Insurance changes, provides a comprehensive production insurance element, income stabilization and income support in times of disaster.

Table 1 — **Risk Management Design Criteria for Agricultural Programs**

Government program and regulation design has to:		
Recommended criteria	**CAIS**	**Crop Insurance**
Be voluntary and provide flexibility	CAIS is a voluntary program in which any farmer in the country is eligible to participate. The participant can elect coverage levels within specified parameters and based on this election, will receive government payments in the event that they trigger under the program.	**Crop insurance is voluntary**, with any farmer in the province eligible to participate provided they meet minimum size and criteria **The farm unit to be insured** depends on program eligibility criteria. **Farmers can choose from four coverage levels.** Their own production experience determines the amount of coverage they qualify for and has a significant bearing on the premiums that they pay. **Farmers can elect to insure one crop but not another**, and to purchase a hail endorsement on top of basic crop insurance. They can alter these insurance decisions from one year to another. **Other features** allow farmers to tailor their crop insurance purchases to their individual farm needs.
Have balance to ensure that the environment is not put at risk, nor agriculture is put at risk by environmental initiatives	CAIS may have a triggering mechanism that will allow for government dollars to flow to producers for specified investments. One of the areas being considered under the specified investment category is investments that are beneficial to the environment.	Crop insurance premiums and coverage are set to reflect actual risks in a production area, then incorporate an individual's own production levels and loss experiences. The program is designed to be neutral to farm decisions — it should not influence marketing decisions or crop choices. Consequently, the program neither promotes nor detracts from environmental or agricultural practices. Federally coordinated but independent environmental reviews of crop insurance in the past found no negative impacts from crop insurance design on the environment.
Enhance market responsiveness (i.e., programs/regulations are market driven).	CAIS is designed to be neutral with regards to marketing and cropping decisions. The program is whole farm based and not commodity specific. It is designed to pay in the event of drops in income that are beyond the control of the producer. The support level is calculated over a five-year period, utilizing a three year Olympic Average (drop the high and the low). The period is long enough to allow for reasonable support, yet short enough not to mask market signals.	Crop insurance is market neutral because it is a production guarantee and production shortages are paid out based on market prices during the crop year.

Government program and regulation design has to:		
Recommended criteria	**CAIS**	**Crop Insurance**
Recognize regional diversity.	The program is designed to target the producer level. Support levels are based on individual histories.	Crop insurance is available nationally but administered and designed provincially. The federal government provides financial support across the country according to legislation and consistent actuarial certification principles. The national framework provides for some regional flexibility so that provinces are not discouraged from providing features that they can cost share with the farmers in their jurisdiction even though federal financial support is not matching. Alberta has taken this approach with hail endorsements, some quality issues, cushioning of low production records and providing separate coverage for the same crop under different management regimes (e.g. dry land and irrigation).
Be based on profit margin (best economic return should be the focus).	The program is designed to stabilize income at the historic average. This is calculated based on the individual's results as reported on his income tax return.	Since each farmer determines coverage based on proven production ability, farmers should be able to Find the optimum point of production relative to return. Producers can choose different levels of production coverage at 60%. 70% or 80% of the yield historical indexes, thus matching past performance to expected current year production.
Help farmers deal with weather uncertainty. For crop insurance to be effective changes have to be made (e.g. market driven, individualized, micro managed and more options).	The program is designed to pay out based on need. The design compares historic margin information with current year results and pays out if there is a shortfall. In the event that there is a weather related income disaster, its impacts should be reflected in the margin results of the current year.	**Market driven** — The program uses market prices to establish dollar coverage. Market prices are provided by professionals with AFRD in conjunction with commodities and futures pricing where available. The program has introduced price insurance options that are driven directly by future prices. **Individualized** — Farmers' coverage and premiums are directly impacted by their individual production experience and loss. There is some buffering built into the system to provide coverage against severe production declines due to weather events. **Micro-managed** — Farmers have direct imput to product design through the various producer groups, the input advisory meetings conducted by AFSC and regularly conducted surveys. Farmers provide their own production information with limited audit inspections if there is no insurance claim. AFSC is charged with providing efficient administration as well as ensuring the integrity of the crop insurance program. As farmers request more options, the program becomes more complicated. Abuse, whether real or imagined, is a persistent concern expressed by farmers. Some "watchfulness" is required for farmers to have faith that they are treated like everyone else and to convince private reinsurance companies that they are not at undue risk. **More options** — Several new options have been introduced to the crop insurance program for 2003. These include coverage enhancements to pasture insurance, more weather stations that drive new weather-index products and coverage for silage under either weather-index or proxy crop options. Crop insurance has undergone over 35 distinctive changes in the past 5 to 10 years in response to stakeholder input.

Government program and regulation design has to:		
Recommended criteria	**CAIS**	**Crop Insurance**
Help farmers cope with price and income uncertainty outside the predictable range.	The program is designed to payout based on need. The design compares historic margin information with current year results and pays out if there is a shortfall. The impacts of revenue reductions as a result of lower prices or input cost increases would be reflected in the farmer's income and thus his contribution margin for the current year.	The crop insurance program has been expanded for 2003 to include protection against market price fluctuations as follows: **Variable price benefit** — automatically part of the crop insurance program to protect farmers for production shortages up to coverage under crop insurance if prices increase by at least 10% (to a maximum of 30%) during the growing season **Spring price endorsement** — provides protection for crop production that is *grown up* to the coverage level in crop insurance if market prices fall by at least 10% (to a maximum of 50%) during the growing season **Revenue coverage** — provides automatic protection, once spring price endorsement is purchased, for crop production that is *either grown or short of coverage under crop insurance*, if market prices fall below a designated floor price.
Encourage farmer attention to focus on financial and marketing management.	The program is designed to encourage farmers to utilize private risk management tools. By alleviating the concerns over income drops, the farmer should have more time to focus on marketing and financial aspects.	Price protection offered under the "new crop insurance products" is based on the difference between spring and fall market prices. Farmers who can arrange sales at higher prices do not lose their gain under the program. With respect to production insurance, farmers' coverage, and to some extent, their premium is based on their own experience and how well they do relative to others. There is a definite incentive to do the best you can in terms of what you produce, the expenses that you incur and the management practices that you use in the field.
Be whole farm in scope and be tailored to the individual farm (micro).	The program takes into account all farming income, and all related input costs. It is individual in nature, being based on the farmer's own history and current year results.	Crop insurance is crop specific and individually farm based rather than structured on a whole farm basis. A whole farm option may be developed as part of the Agriculture Policy Framework in the next few years.
Encourage financial institutions to invest in agriculture.	The program is designed to provide support in years where income has fallen. This will reduce the overall risk of farming and make investing in farming more attractive.	Crop insurance payments can be pre-assigned jointly to the farmer and a lending institution. Lenders appreciate this feature and, although it is not used in on the majority of crop insurance contracts, it is a main reason why some farmers can get adequate financing from those institutions.

Transportation and Water

An integrated transportation system is vital to Alberta's agri-food industry. Producers and processors need to move products to market in a cost efficient manner. Industry also depends on reliable supplies of water to produce and process food. Recognizing the importance of these critical factors, several action teams put forward recommendations that they thought would improve the provincial transportation system and safeguard the industry's access to adequate and safe water supplies.

While the Ag Summit discussions were taking place, a number of events & structural changes in the industry were occurring that appear to have influenced the recommendations from the action teams such as:

- The move to larger farms, fewer country grain elevators and larger confined feeding operations (e.g. feedlots, hog barns) were putting more heavy truck traffic on roads. This created problems in some rural areas where the roads may not have been built to handle the increasing amount of heavier loads.
- There were "breakdowns" in treatment procedures at water treatment facilities in Walkerton, Ontario and North Battleford, Saskatchewan.
- Several years of drought created low levels or no water in dugouts, sloughs and water wells. Water for irrigation was rationed in some cases.

Ag Summit Recommendations

Action Team recommendations concerning transportation and water have been categorized in this response report under the following headings:

- Roads
- Improving the Transportation System
- Water Supplies.

Yesterday's and Today's Actions

Because transportation and water infrastructure is critical to the growth and sustainability of the provincial economy, departments have already addressed many of the issues identified in the Ag Summit recommendations. Alberta Transportation continues to support the provision of transportation and water control infrastructure as it fulfills the goal of supporting municipalities in addressing local transportation and water/wastewater needs. Other Alberta Transportation initiatives have focused on creating a framework that would promote increased competition among rail carriers in the province. Alberta Environment has identified the goal of being a leader in proactive environmental protection. The key initiative under this goal has been the development of *Water for Life, Alberta's Strategy for Sustainability*.

Roads

The recommendations put forward by the Action Teams asked the provincial government to develop a market grid road system and to increasing funding for roads and to get the Federal Government to reinvest fuel taxes on roads.

Develop a Municipal Market Grid Road System

This recommendation was based on the idea that rural municipalities should coordinate with their neighbours so that a set of "Market Grid Roads" (high standard local roads) could be established and supported. This would avoid changes in road standards at municipal boundaries and could improve the local road system. These roads are the responsibility of the local municipal authorities.

Alberta Transportation supports the rural municipalities in maintaining and improving their roads through the Rural Transportation Partnerships Program. That program provides $62 million annually to rural municipalities. In addition to this, the Department of Municipal Affairs provided grants of about $2 million so that all rural municipalities could undertake local road studies in the year 2000. Those reports identified key local roads and prioritized required construction and maintenance. These studies indicated that 85 percent of key local roads were in acceptable condition. To provide further support to rural municipalities, Alberta Transportation has assumed full responsibility for the secondary highway network. This allows the rural municipalities to avoid costs associated with maintaining secondary highways. This policy will also ensure that adequate investment in road construction and maintenance is undertaken. (The cost saving from this policy change for the rural municipalities has been estimated at $85 million per year.)

Alberta Transportation is directly responsible for 30,000 km of provincial highway network link the rural roads to markets and other locations. Work undertaken by Alberta Transportation indicates that on average, farmland in Alberta is located 4.4 km from a highway (main or secondary). The distance is shorter in the more densely settled southern regions. Because of the extensive nature of the primary highway network and the fact that the Market Grid Roads are under local authority, the department has not promoted a market grid system directly.

Funding for Roads

The recommendations put forward called for the province to review its funding formulas for roads and to pressure the Federal government to reinvest fuel taxes in roads.

A committee representing the Alberta Association of Municipal Districts & Counties (AAMD&C) and Alberta Transportation reviewed the funding formula for the Rural Transportation Grants in 2001/02. No changes have been implemented at this time, but program funding has been maintained despite budget pressures. This situation did not change when the new budget was released in April of 2003.

The latest budget also reinstated the Resource Roads for New Industry Program (RRP). The RRP will provide $16 million in funding assistance to local municipal road authorities to deal with pressures caused by new or expanded value-added processing facilities, resource and other industries, intensified farming operations or high through-put grain elevators.

The federal government collects significant tax revenue from its excise taxes on motor fuels. The tax rate on gasoline has been ten cents per litre and on diesel, four cents per litre. These tax rates generate revenues of over $550 million per

year. In the years immediately after the Ag Summit, less than 5 percent of the federal government revenue collected from Alberta was reinvested. In 2002, the federal government announced the Canada Strategic Infrastructure Fund that will provide $150 million over the next few years. If all federal programs are combined, today the federal reinvestment in infrastructure currently represents about 10 percent of the federal fuel tax collected in Alberta.

The Alberta Minister of Transportation, as a member of the Council of Western Provincial Transportation Ministers, wrote to the federal Minister of Transportation on this subject in February of 2003. They indicated that a larger federal commitment to infrastructure spending was required. They also indicated that if the federal government was not prepared to link spending to the revenue generated it should vacate the tax space and allow the provinces to increase their fuel tax revenue. Transport Canada has indicated that fuel taxes will continue to flow into the general revenue fund and that there is no linkage between fuel tax revenue and infrastructure expenditures.

Improving the Transportation System

The Action Team recommendations asked the provincial government to:

1. Undertake a study to determine the economic impact of opening access to rail beds.
2. Lobby the federal government and the Prince Rupert Port Authority to invest funds to upgrade the Fairview Terminal at Prince Rupert so it could handle specialty crops.
3. Form a provincial transportation secretariat similar to the secretariat that existed prior to 1990.

Opening Access to Rail Beds

In Alberta's submission to the Canadian Transportation *Act Review*, Alberta recommended that the federal government undertake a study to look at opening access to rail beds. The Canadian Transportation Act Review Panel did not undertake the study but did outline conditions for granting running rights that were very restrictive.

Alberta Transportation has commissioned InterVISTAS Consulting to look at the question of competition within the rail sector and the consequences of less restricted access to the rail beds. This study called "*An Economic and Regulatory Framework for Rail Competitiveness*" also questioned the economic consequences of implementing open access. The study was concerned that unlimited access to main lines had the potential to reduce line densities and efficiencies.

The InterVista's report also outlined alternative approaches for dealing with the abuse of market dominance, including provisions in the existing Canada Transportation Act (CTA) and provisions available under federal competition legislation. This study has been completed and shared with the federal government and other provinces. The results of that study do not support open access to all rail beds.

Expanding Prince Rupert

During the years 2000-03 there was severe drought in parts of western Canada. This has had a particularly negative impact on the exports of specialty crops. That, in turn, has reduced the demand for specialty crop handling facilities.

During this same period, the Port of Prince Rupert has witnessed shrinkage in bulk grain shipments, coal movements, and lumber shipments. To compensate for these losses, the Port Authority has initiated a study to evaluate the feasibility of developing a container-handling facility at the Fairview Terminal. Alberta Transportation and Alberta Economic Development have both provided funds to support the study.

There are many players at the Port of Prince Rupert including: CN, the federal government, and the City of Prince Rupert. They all must cooperate if any development is going to proceed at the port.

This recommendation has been pushed to the sidelines by the drought and the focus on a potential container terminal at the port. Future considerations are provided under Tomorrow's Actions.

A New Transportation Secretariat

The original Transportation Policy Group was consolidated in Alberta Transportation, by agreement of the Minister's involvement in transportation policy in 1990. The emphasis is now on interdepartmental cooperation on issues of common concern. There has been a close working relationship between Alberta Transportation, Alberta Agriculture, Food and Rural Development (AAFRD) and Alberta Economic Development in developing government-wide submissions to the Canada Transportation Act Review and the Canada Marine Act Review.

Alberta Transportation works closely with AAFRD on issues like the grain transportation policy. It also contributes to the cross-ministry initiatives on economic development, including: the Rural Development Initiative and the Regional Economic Growth Initiative. The fact that there is no single secretariat has not prevented effective coordination and development of transportation policy within the Alberta Government.

Water Supplies

Alberta is facing significant pressures on its water resources. Population growth, droughts and agricultural and industrial development are increasing demand and pressure on the province's water supplies. These pressures are a risk to the health and well-being of Albertans, our economy and our aquatic ecosystems.

In the past, Alberta has been able to manage the water supply, while maintaining a healthy aquatic environment because there has been a relatively abundant, clean supply to meet the needs of communities and the economy.

However, the fluctuating and unpredictable water supply in recent years has stressed the need to make some major shifts in our approach to managing this renewable, but finite, resource.

The recommendations put forward by the Ag Summit Action Teams are aligned with the outcomes of the *Water for Life, Alberta's Strategy for Sustainability* report. Ag Summit recommendations called for public involvement in decisions affecting water, assessing the long-term water needs of the province, the development of appropriate standards for water and wastewater treatment and increased investment in water delivery infrastructure.

Public Involvement

In 2001 the Government of Alberta initiated discussions on a provincial water management strategy. The development of the *Water for Life, Alberta's Strategy for Sustainability* involved extensive consultation. In March and April of 2002, fifteen workshops, a mail-out to over 1300 Albertans, a web-based feedback system and a random telephone survey were used in the initial stage of consultation. As well, a Minister's Forum in July 2002 invited over 100 Albertans to come together for discussions and feedback. Final consultations were completed in May of 2003.

When developing *Water for Life, Alberta's Strategy for Sustainability*, it was clear that all aspects of society, not just governments, have a role to play in water management and decision-making. Citizens, communities, industry and government must work together to ensure that the right decisions are made, and to ensure that water resources are being used in a safe and sustainable manner.

In support of the *Water for Life, Alberta's Strategy for Sustainability*, a framework is being developed for three kinds of partnerships to improve water/watershed management in Alberta:

- Provincial Water Advisory Council — a multi-stakeholder council that will examine issues pertaining to water management in Alberta
- Watershed Planning and Advisory Committees — committees that will involve communities and stakeholders in watershed planning, protection and management
- Community-based Watershed Stewardship Groups — groups that will deliver watershed education and implementation of local water management solutions.

This watershed approach will result in greater public involvement through consultation and partnerships.

Future water supply and needs

Information and knowledge of our provincial water resource is a critical element in our ability to manage water effectively. Knowledge of the amount of water that is underground in aquifers and flowing in rivers, the quality of this water and the requirements of healthy aquatic ecosystems is needed to make decisions on the amount of water that can be withdrawn and the amount of effluent that can be discharged into Alberta's rivers. This knowledge must be available to everyone that makes decisions that can affect a watershed.

Timely, accurate information that is available to all Albertans, in a form they can understand and use, will improve the management of Alberta's water resource and support the watershed approach. Under *Water for Life, Alberta's Strategy for Sustainability*, the provincial government will:

- Determine Alberta's surface water supply;
- Determine Alberta's groundwater supply; and
- Determine the quality of Alberta's surface and groundwater.

Standards and regulations for water and wastewater treatment

Alberta continues to work with all levels of government (i.e., Federal / Provincial / Territorial Drinking Water Committee) to ensure that standards and regulations are established, understood and achieved.

Alberta has established the authority to regulate the treatment of drinking water through the *Environmental Protection and Enhancement Act*, and its regulations. Under this Act, water from waterworks systems must meet Health Canada's *Guidelines for Canadian Drinking Water Quality*. A waterworks system, as defined by the Act, refers to any system providing potable water and includes elements such as water treatment plant, potable water storage facilities and water distribution systems. The *Activities Designation Regulation* describes the waterworks regulated by the legislation and regulations. The Act defines potable water as water that is supplied by a waterworks system and is used for drinking, cooking, bathing, dish washing and other domestic purposes. The *Potable Water Regulation* stipulates requirements such as the design, performance and operation of waterworks facilities. The *Potable Water Regulation* also incorporates the *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems* [Standards and Guidelines document].

The Standards and Guidelines document details performance standards for waterworks, which treat water, based on the source and quality of that water. There is a minimum performance requirement for the treatment of surface water and groundwater subject to surface water influences.

Each province and territory has the mandate of regulating and establishing standards for municipal wastewater. Alberta has established the authority to regulate Municipal wastewater through the *Environmental Protection and Enhancement Act*, as well as regulations. Under this Act, municipal wastewater treatment and disposal are required to meet the *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems* [Standards and Guidelines document]. Alberta's standards for treatment and disposal of municipal wastewater are one of the most stringent and proactive standards across Canada.

Increase funding for water control and delivery

The Alberta Government's funding for water control and delivery has not increased significantly since the beginning of the Ag Summit. The Alberta Municipal Water/Wastewater Program provides about $25 million annually for municipalities with populations under 45,000. The Water Management Program provides $32 million annually, the Irrigation Rehabilitation Program provides $19 million annually and Alberta Environment provides funding to resolve surface water management and erosion problems through the Alberta Water Management and Erosion Control Program.

Since Ag Summit began; the federal government has announced the Infrastructure Canada Alberta Program (ICAP). The program supports water and wastewater projects. The funding formula involves a contribution of 1/3 by each level of government. The Program is expected to provide $44 million to rural areas over five years.

Alberta's draft water strategy, *Water for Life, Alberta's Strategy for Sustainability*, identifies two areas where there is a need for increased funding. Those are regional systems and enhanced water treatment to meet new standards.

Tomorrow's Actions

Roads

In the future, the funding formulas for transportation grants will be reviewed to ensure that objectives are being met. These reviews take place periodically when new programs are developed or when concerns about existing programs are identified by stakeholder groups.

On the issue of federal fuel taxes, all Premiers have called upon the federal government for stable long-term federal funding for transportation infrastructure. Western Premiers have called upon the federal government to use fuel taxes to support highway construction and maintenance.

Improving the Transportation System

The Alberta Government will continue to work with shippers and carriers to improve the efficiency of the transportation system in Alberta and western Canada. There are several strategies that will be followed to achieve this goal: expanded infrastructure, improved connections between modes and increased productivity of the system. Examples of improved infrastructure include upgrading the North-South Trade Corridor to a four-lane standard and construction of Ring Roads around Edmonton and Calgary. The province is also working to ensure that there are good links between the modes by investing in connectors between the provincial highway network, airports, railway terminals and container facilities etc. Policies that are expected to improve productivity include: the expansion of the network where Long-Combination Vehicles are permitted, expedited vehicle inspection procedures (weigh in motion) and harmonization of vehicle regulations among the western provinces. These initiatives should ensure that all Alberta industry has access to cost-effective transportation services in the future.

Prince Rupert provides an alternative export route for the shipment of some bulk commodities from western Canada. Alberta Transportation and Alberta Economic Development will evaluate the results of the Prince Rupert container terminal feasibility study prior to considering future courses of action.

Strategic Multi-modal Infrastructure Plan

Alberta Transportation is also developing a Strategic Multi-modal Infrastructure Plan for the year 2025. That plan will:

- Look at the infrastructure available in each mode, future needs, and investments or policies required to address deficiencies
- Provide long-term direction to Alberta Transportation
- Provide input to a western regional plan that is being developed by the Council of Western Provincial Transportation Ministers

Water Supplies

Alberta Environment and other key Ministries will continue to take steps required to implement *Water for Life, Alberta's Strategy for Sustainability*. This will involve the following.

- The creation of councils to support the shared governance structure recommended in the strategy. These councils include: Provincial Water Advisory Council, Watershed Planning and Advisory Committees and Community-Based Watershed Stewardship Groups.
- The completion by Alberta Environment of an inventory of surface and groundwater supplies and quality.
- The completion of the review of the Alberta Municipal Water/Wastewater Program.

Energy

In 2000 and 2001, low cost hydroelectric imports into Alberta were limited by drought throughout the Pacific Northwest. California was also experiencing deregulation challenges that overflowed to the Alberta experience. In addition, Alberta continued to experience sustained growth. These factors placed an upward pressure on energy prices and were occurring as the Alberta Government introduced customer choice in the electricity retail sector starting January 1, 2001.

Within that same time period, Ag Summit was taking place. Some teams put forward recommendations dealing with this upward movement of energy prices. In the "Electricity" section of the Action Team on Taxation (ATOT) report, for example, the following comments were made.

> *"There is no doubt that electricity deregulation, coupled with skyrocketing prices of other forms of electricity has hit many Alberta businesses very hard. The Alberta government's action to alleviate the situation through rebates and credit programs are welcome in the short term however, there is concern that they will not stem the difficulties of deregulation in the medium and longer term."*

Even though electricity costs were the main focus of the Ag Summit Action Team's recommendations, the natural gas market is also discussed because gas prices can influence electricity prices. Gas prices peaked in the winter of 2000 and 2001 at much the same time as Albertans were experiencing a spike in electricity prices.

Ag Summit Recommendations

Action Teams expressed concerns about rising energy prices (mainly electricity) in the early 2000's. For example, value-added processing and some primary production consume significant amounts of electricity and natural gas. Action Team recommendations developed through the Ag Summit were concerned with:

- a stable supply of energy at competitive prices
- assistance with the management of electricity needs
- establishment of new cogeneration and alternate sources of electricity (e.g. using biological sources such as methane produced from manure to generate electricity)
- monitoring of utility prices
- keeping Alberta businesses competitive after rebates are discontinued

Yesterdays' and Today's Actions

Electricity

Alberta is benefiting from many positive results of electric restructuring. Alberta's restructured electric industry has encouraged the development of new generation without the need to subsidize projects with taxpayer's money.

The Electric Utilities Act (EUA) 1995 and EUA 1998 were Alberta's initial phase of restructuring. They established a framework for a competitive wholesale market for the sale of electricity and retail competition for consumers. Refinements to the 1998 EUA have been incorporated into the EUA 2003. Specific elements of the EUA 2003 include a greater harmonization between natural gas and electricity markets to give customers more choices in the marketplace, policies that level the playing field to encourage further investment and a rate called the Regulated Default Supply (RDS), which passes on the benefits of competitive wholesale electricity market prices to customers.

Restructuring has introduced many benefits for Albertans, including a 30-percent increase in the amount of power available (between 1998 and March 31, 2003, during which time about 3,000 Mega-watts (MW) of new power came on line), significant green power developments and an increase in retail market options and choice for customers. [NOTE: One MW is one thousand kilowatts, roughly equivalent to the power consumed by 1,000 typical Canadian households per year.] Above all, it means security of supply for today and for the future, without the threat of public or taxpayer funded debt. For more details see tables 1a, 1b and 1c on pages 53 and 54.

Power generated in Alberta is sold through a competitive Power Pool operated by Alberta's Independent System Operator (ISO). The Power Pool is an open-access competitive market for electric energy. Power can also be exchanged through forwards markets or direct sales arrangements. The ISO co-ordinates all electricity sales and purchases in the province and all energy imports and exports. It also provides real-time control of the provincial electricity grid.

Prior to restructuring a large portion of Alberta's generating capacity was owned by ATCO Power, EPCOR and TransAlta. To facilitate the move from a regulated to a competitive generation market, the rights to the output of formerly regulated units were auctioned in the form of Power Purchase Arrangements (PPAs) starting in the summer of 2000. The PPA buyer has the right to offer the electricity for sale into the Power Pool. The remainder of the province's domestic supply is generated by industrial and independent power producers.

Market refinements are intended to contribute to greater confidence and new investment in the industry. The market refinements include initiatives which:

- Establish an Independent System Operator (ISO). The ISO operates the Power Pool and is responsible for system control, long term transmission system planning, management and load settlement.
- Increase the independence of the Balancing Pool. The Balancing Pool is a financial account designed to ensure that the cost and benefits of existing generation units built under regulation (before 1995) continue to be shared among Albertans.
- Expand the responsibility of the Market Surveillance Administrator (MSA). The MSA is responsible for overall market surveillance and monitoring the activities of market participants to ensure that electricity markets operate competitively and in the best interest of consumers.
- Have the Alberta Energy and Utilities Board (EUB) approve distribution and Regulated Rate Option (RRO) tariffs for municipally-owned utilities with an affiliated retailer operating outside their municipal boundaries

- Introduce a Payment in Lieu of Taxes regulation for Medicine Hat's electric energy trades.
- Better align natural gas and electricity legislation and regulations to encourage more choice in the marketplace and to provide enhanced customer choice options.

Stable Supply

Alberta has a stable supply of electricity. Alberta's installed generating capacity is nearly 12,400 MW (including 950 MW of capacity on the interconnections to Saskatchewan and BC). Peak demand (the maximum power required by customers at any one time) was just less than 8600 MW in 2002. Since 1998, installed generation capacity in Alberta's has increased by about 30%. Approximately 5,200 MW, representing about $6 billion, is proposed for development before the end of 2006.

Management of electricity needs

Alberta's restructured electric industry has encouraged a growing number of energy management companies to enter the market. These companies can assist customers in effectively managing their electricity consumption. In addition, most retailers also offer audit programs to evaluate energy consumption and identify methods to improve efficiency.

To assist farmers and ranchers to track energy use and associated costs the Alberta Environmentally Sustainable Agriculture (AESA) Program and the Agtech Centre in Lethbridge developed an Energy Audit Manual and a fact-sheet. By completing the manual, farmers and ranchers are able to identify areas in their business where they could save energy and money. The fact-sheet provides specific information about lighting issues. The Energy Audit Manual and fact-sheet are available from Alberta Agriculture, Food and Rural Development.

Cogeneration and alternate sources

The Alberta Government does not support one type of generation over another. Market signals determine the mix of generation. In Alberta's restructured electric industry, competitive market forces — the laws of supply and demand — guide decisions by developers about investment in new generation. All new power has been brought on-line without provincial government assistance: investors assume the risk of their investments.

A mix of renewable and non-renewable energy sources will best meet Alberta's future generation requirements. Alberta's open market allows any company to bring on new generation as long as it can meet our environmental requirements. Between 1998 and 2002, Alberta's electricity generation from green power, including wind, biomass and small hydro sources, has more than doubled.

The amount of co-generation capacity has also increased substantially from 1998 to 2002. Since 2000, more than 700 MW of new co-generation capacity has come online — an increase of more than 30 percent. In addition, the Alberta Government has signed a contract to purchase 90 per cent of its electricity requirements from green power starting in 2005 and has set a goal for increasing the renewable and alternative energy portion of total provincial capacity by 3.5 percent by 2008 as part of its Taking Action — Albertans and Climate Change plan. This illustrates the government's commitment to reducing greenhouse gas emissions.

Alberta has about 240 MW of independently owned green power and 795 MW of formerly regulated hydro projects currently in operation. The province is actively considering technologies that may allow livestock producers to develop cost-effective electricity from biological sources (e.g. methane produced from manure). More than half of Canada's total wind generation capacity, about 110 MW, is situated in Alberta.

Monitoring

Alberta Energy is continually monitoring electricity prices — both wholesale and retail prices. The average Pool price for electricity in 2002 was 4.4 cents/kWh compared to 7.1 cents/kWh in 2001. Pool prices have increased somewhat in 2003 (the average price for the first six months in 2003 was 6.7cents/kWh). The increase is mainly attributed to a corresponding increase in natural gas prices.

Retail rates, including the Regulated Rate Option and competitive offers for residential, farm, and small commercial customers, are posted and updated weekly on Alberta Energy's Customer Choice website (**www.customerchoice.gov.ab.ca**).

Ensuring Competitive Energy Costs

The Balancing Pool provided electricity rebates to customers in 2001. In total more than $2 billion was returned to customers in the form of electricity rebates. The electricity rebates included: $40/month for residential customers, $40/month plus 3.6 cents/kWh for farm customers, and 3.6 cents/kWh for irrigation and small commercial customers.

Natural gas

Natural gas was introduced to rural Alberta with the *Rural Gas Program* (1973). The provision of natural gas to rural areas brought greater equality in living standards to all Albertans. It also facilitated diversification and growth of the rural economy.

In 1985, a policy of reliance on markets to set wholesale natural gas prices was adopted within Alberta and across Canada. Prices began to be set in the marketplace by supply and demand. At that time, natural gas prices dropped to low levels. The surplus that had been built up during a time of non-market prices and export restrictions allowed these low prices to continue for 15 years. However, in the past few years, growth in gas markets and the increased desirability of gas as a clean burning, environmentally friendly fuel, combined with increases in export capacity and constraints on new areas to drill for gas have resulted in a period of increased price volatility.

Competitive Prices

Market refinements implemented through the introduction of amendments to the Gas Utilities Act in 2003 are aimed at addressing some of the same concerns Ag Summit participants discussed. The legislation and associated regulations are designed to refine the retail marketplace by: aligning natural gas and electricity retail market rules, encouraging increased retail competition, providing more choice in the marketplace and allowing firms other than utility companies to provide regulated gas service to most consumers.

Under customer choice, consumers can purchase natural gas from the supplier of their choice. This allows consumers to purchase gas under terms than meet their business and personal needs. It also gives consumers more control over their expenditures. For example, consumers can choose to lock in a fixed price for natural gas, much as they can lock in a fixed rate mortgage. For consumers that prefer to purchase gas under regulated rates, that option is still available, and will continue to be offered indefinitely. These refinements will provide most natural gas consumers in Alberta with increased options for dealing with natural gas price volatility.

Assistance

During the winter of 2000/2001, natural gas prices skyrocketed to unprecedented levels. The government responded by issuing nearly $1 billion in natural gas rebates. The ability to provide these rebates was a result of increased natural gas royalty revenue. To ensure that Alberta consumers continue to have access to competitively priced natural gas, the Alberta Government also passed new legislation governing natural gas rebates. In recognition of the increased price volatility in the natural gas market and the benefits that high gas prices have on government royalty revenue, the Alberta government can now issue natural gas rebates to consumers through the *Natural Gas Price Protection Act (NGPPA)*. The NGPPA sets out a formal structure for the issuance of rebates. It takes into account the level of market prices, the government's revenue position, and other government spending priorities. An annual price for royalty purposes of $5.50/GJ was set as a benchmark for the consideration of rebates.

In the 2000/01 fiscal year, when rebates were last issued, the annual price was $5.76/GJ. In 2001/02 natural gas prices moderated, averaging only $3.74/GJ. In 2002/03, natural gas prices rose sharply late in the fiscal year, but averaged only $4.72/GJ on an annual basis.

In response to concerns raised over the structure of the natural gas rebate program, Alberta Energy is reviewing the program, with a view to making it more responsive to changes in natural gas prices and making it more easily understood by consumers.

Monitoring

Natural gas prices, including wholesale market prices, natural gas utility rates, rates for rural gas co-operatives and retailer offerings are monitored by Alberta Energy on an ongoing basis. The average monthly spot price in Alberta for 2002 was $3.86/GJ, vs. $5.97/GJ in 2001. Prices increased in 2003, averaging $6.83/GJ from January to July, due to the cold winter weather, high oil prices, low storage inventory levels and weak gas supply growth. Retail rates, including gas cost recovery rates and competitive retailer offers for residential and commercial customers are posted and updated weekly on the Government's customer choice website (**www.customerchoice.gov.ab.ca**).

Tomorrow's Actions

This section provides information about planned or anticipated Alberta Government actions that address the recommendations put forward by Action Teams during Ag Summit. Information about electricity, which was the main thrust of Ag Summit recommendations, is provided first. Actions to address natural gas concerns are provided afterward.

Electricity

Many countries around the world continue to deregulate their utility industries. According to the Canadian Federation of Independent Business ("Power" Choices, Understanding the Deregulated Electricity Market — **www.cfib.ca/energyalberta**) the United Kingdom, Germany and Sweden are well advanced. The USA has experienced some difficulty, but it is gaining acceptance state-by-state. In Canada, Alberta remains committed to electric restructuring and continues to take steps to reinforce that commitment.

Alberta has and should continue to experience positive benefits from its restructured electric industry. According to Center for the Advancement of Energy Markets, which publishes the Retail Energy Deregulation Index, Alberta currently ranks number one in Canada and sixth in the world out of nearly 70 jurisdictions in their progress towards a restructured electricity market.

Competitive Prices

The Advisory Council on Electricity (a group formed in 2001 to advise the Energy Minister on electric restructuring) will report on the following issues:

- Why some parts of Alberta are paying higher prices
- Billing practices of utility companies
- Fairness of all line items on bills
- Consumer accessibility to competitive market options
- Long-range forecast for consumer prices
- Current and future benefits of deregulation for consumers
- Impacts of government and Energy Utility Board decisions on consumer prices
- Other consumer issues identified by the council.

Management of Electricity Needs

Alberta Energy is planning to develop a broad communication plan to educate customers about their energy options, including the Regulated Default Supply. This will help customers make informed electricity purchasing decisions and manage price volatility if desired. Currently, customers can access information about Alberta's restructured electricity market on the government's Customer Choice website (**www.customerchoice.gov.ab.ca**).

Cogeneration and Alternate Sources

The Alberta Research Institute, Alberta Agricultural Research Institute, Aiberta Energy, Alberta Environment, Alberta Transportation, Alberta Agriculture, Food and Rural Development and Alberta Economic Development are taking part in a strategic level feasibility study. The study will assemble the information needed to identify opportunities, guide strategic investments in technology research and development and encourage the growth of a bio-energy

(i.e. energy — electrical, gaseous, liquid, solid, chemical or any other — derived from organic matter) industry in Alberta.

As part of the Government's *Taking Action — Albertans & Climate Change* plan; the Alberta government has set a goal of increasing the renewable and alternative energy portion of total provincial energy capacity by 3.5 per cent by 2008. This equals about 560 Megawatts (MW) of new capacity.

Monitoring

The provincial government will continue to monitor energy costs. When required, steps will be taken to ensure that Alberta's reliable supply of energy is maintained at competitive prices.

Natural Gas

There are options to assist consumers manage their natural gas needs. To help consumers make prudent decisions, Alberta Energy is considering a comprehensive consumer education program on natural gas and electricity customer choice, starting the in fall 2003.

The province has passed but has not proclaimed legislation that could allow customer choice to develop in rural natural gas co-operative systems. Currently, only non-farm consumers that use more than 10,000 GJ annually can choose their gas supplier. Under the new rules, rural gas co-operatives could choose to offer customer choice to their members, provided that it is approved by a vote of their membership. Similar rules apply to municipally owned gas systems, which can also choose to offer customer choice.

The fact that natural gas is a clean burning resource has encouraged exploration for new sources. New regions have the potential to increase natural gas supply. Northern Canada and Alaska are two such areas being examined. Alberta also has considerable resource potential in the extraction of natural gas from coal seams. It is estimated that Alberta coal beds could contain approximately 100 to 500 trillion cubic feet (Tcf) of natural gas, which is greater than the province's remaining potential of conventional natural gas resources (estimated at 88 Tcf).

Table 1a — **Alberta Generation Additions 1998 – 2002**

Developer	Location	Installed Capacity (MW)	Type	Status
Air Liquide	Scotford	82	Cogeneration	On line
Amoco/ATCO Power	Primrose	84	Cogeneration	On line
API Grain Processors	Red Deer	3.5	Cogeneration	On line
ATCO Power	Poplar Hill	43	Gas Turbine	On line
ATCO Power	Rainbow	91	Cogeneration	On line
ATCO Power	Valleyview	46	Natural Gas	On line
BC Hydro	Fort Nelson	45	Gas Turbine	On line
Canadian Gas & Electric	Drywood	12	Natural Gas	On line
Canadian Hydro / EPCOR	Taylor Chute	12.8	Hydro	On line
Canadian Hydro Developers	Cowley Ridge Exp.	28	Wind	On line
City of Medicine Hat	Medicine Hat	25	Natural Gas	On line
Collicutt Hanover Services	Red Deer	2	Cogeneration	On line
Columbia Power Systems	Red Earth Creek Area	4	Cogeneration	On line
Drayton Valley Power (Small Power R&D Program)	Dapp	17	Biomass	On line
EnCana	Cavalier	106	Cogeneration	On line
EnCana/Nexen	Balzac	106	Cogeneration	On line
EPCOR/ Peigan First Nation	Pincher Creek	0.9	Wind	On line
Imperial Oil	Cold Lake	160	Cogeneration	On line
Maxim Energy Corp.	Taber area	20	Cogeneration	On line
Northstone Power Corp.	Elmworth Area	3	Natural Gas	On line
NOVA	Gold Creek	6.5	Waste Heat	On line
NOVA / ATCO / EPCOR	Joffre	416	Cogeneration	On line
Shell / ATCO Power	Muskeg	85	Cogeneration	On line
Syncrude Aurora	Fort McMurray	82	Cogeneration	On line
TransAlta	Dow Chemical Fort Saskatchewan	120	Cogeneration	On line
TransAlta	Suncor — Fort McMurray	360	Cogeneration	On line
TransAlta	Sundance Upgrades	42	Coal	On line
TransCanada	Bear Creek	50	Cogen & Biomass	On line
TransCanada	Carseland	81	Cogeneration	On line
TransCanada	Redwater	42	Cogeneration	On line
TransCanada Power	Medicine Hat	46	Cogeneration	On line
U of A	Edmonton	25	Cogeneration	On line
Various Companies	Various	20	Flare Gas	On line
Vision Quest	Pincher Creek	40.2	Wind	On line
Total New Generation On line (1998 – 2002)		**2,307**		

Table 1b — **Generation Additions 2003**

Developer	Location	Installed Capacity (MW)	Type	Status
Calpine	Calgary	250	Natural Gas	On line (1Q 2003)
EnCana	Foster Creek	80	Cogeneration	On line (1Q 2003)
Shell / ATCO Power	Muskeg	85	Cogeneration	On line (1Q 2003)
Shell / ATCO Power	Scotford	160	Cogeneration	On line (1Q 2003)
TransCanada	Bear Creek	30	Cogen & Biomass	On line (1Q 2003)
Vision Quest	McBride Lake	10	Wind	On line (1Q 2003)
Total New Generation		**615**		

Table 1c — **Generation Proposed 2003 - 2006**

Developer	Location	Proposed Capacity (MW)	Type	Status
ATCO Power	Oldman	25	Hydro	2Q 2003
Vision Quest	McBride Lake	65	Wind	2Q 2003
City of Grande Prairie	Grande Prairie	1.6	Natural Gas	3Q 2003
Southwinds	Nobleford	1	Wind	3Q 2003
Benign Energy	Pincher Creek	65	Wind	4Q 2003
Canadian Hydro Developers	Sennet	35	Wind	4Q 2003
Irrican	St. Mary River	7	Hydro	4Q 2003
TransAlta	Keephills Upgrades	30	Coal	4Q 2003
TransCanada/ PetroCan	Fort McMurray	165	Cogeneration	4Q 2003
Wind Power Inc.	Pincher Creek	50	Wind	4Q 2003
subtotal 2003		**445**		
AES Calgary	Calgary area	350	Natural Gas	4Q 2004
Altec Power	Fort MacLeod	70	Cogeneration	2Q 2004
Canadian Gas & Electric	Drywood Exp.	7	Natural Gas	2004
Canadian Gas & Elec. / Canfor	Grande Prairie	25	Waste Wood	4Q 2004
Canadian Hydro Developers	Drywood	72	Wind	4Q 2004
EnCana	Medicine Hat	90	Cogeneration	2004
TransAlta	Sundance Upgrades	100	Coal	4Q 2004
Wind Power Inc.	Pincher Creek	50	Wind	4Q 2004
subtotal 2004		**764**		
AES Calgary	Calgary area	175	Natural Gas	4Q 2005
EPCOR	Genesee	490	Coal	2005
Fording	Brooks area	1,000	Coal	2005-2006
Hunt Power	Crossfield	345	Natural Gas	2005
Syncrude Aurora	Fort McMurray	238	Cogeneration	2005
TransAlta	Keephills	900	Coal	2005
TransAlta	Sundance Upgrades	60	Coal	2Q 2005
subtotal 2005		**3208**		
Glacier Power	Dunvegan	80	Hydro	2006
OPTI Canada	Fort McMurray	400	Cogeneration	2004-2006
Petro Canada	Meadow Creek	330	Cogeneration	2006
subtotal 2006		**810**		
True North	Fort McMurray	160	Cogeneration	2006+
subtotal 2006+		**160**		
Total Generation Proposed (2003 - 2006)		**5,386.6**		

Access to Land

Many producers are concerned about the amount of land that is being taken from the province's agricultural land base. In the initial Ag Summit consultations land use was identified as one of the top five challenges the agri-food industry was facing. In recent years the rate of loss and fragmentation of land due to development of agricultural land in the Calgary-Edmonton corridor is focusing this concern.

The Land Use Core Action Team (LUCAT) felt that economic growth and the competition for resources was placing pressure on Alberta's land base and water resources. The team thought it would be timely if the province and the various industrial sectors looked at how they were competing for these finite resources since the current rate of loss couldn't be sustained. The team stated, "In addition to the agricultural sector, other sectors of the Alberta economy are also experiencing land use conflicts and resource pressures due to their growth and expansion requirements for land."

LUCAT felt that the agricultural land base in particular was under increasing pressure from other industries and since the agri-food industry is so crucial to the provincial economy more has to be done to protect it. The team identified the loss and fragmentation of agricultural lands though urban sprawl as having a significant impact on the long-term sustainability of the agri-food industry.

Through their deliberations and extensive consultations with stakeholders LUCAT developed a vision which saw future generations of Albertans having a legacy of land use planning that has been intelligently and collaboratively planned, using science-based information and clearly demonstrated public support.

Ag Summit Recommendations

The Ag Summit's Land Use Core Action Team (LUCAT) presented its report entitled *Towards the Development of a Provincial Land Use Strategy for Alberta: An Agricultural Perspective*. The report addressed a specific five-year goal of the Ag Summit, "*achieve public consensus for land use priorities*," by laying out proposals to "achieve public support for land use priorities by establishing improved landscape planning and conservation tools to protect working agricultural landscapes."

To accomplish the goal LUCAT presented several recommendations. The recommendations would see:

- Provincial/municipal development of a long-term sustainable land use policy and regulation framework
- Provincial development of enforceable land use policies for protecting agricultural lands
- Provision of technical assistance to local governments in protecting agricultural working lands
- Provincial investigation of fiscal incentives and conservation programs for retaining sustainable agricultural landscapes.

Each recommendation was accompanied by details of the rationale, key strategies/actions, the assignment of responsibility among stakeholders, and budget.

Yesterday's and Today's Actions

A Sustainable Land Use Policy and Regulation Framework

The Province has delegated land use planning authority and responsibility to municipalities. Under the Municipal Government Act (administered by Municipal Affairs), municipalities adopt statutory plans and land use bylaws, and appoint subdivision and development authorities to make decisions on subdivision and development permit applications. The Province has adopted land use policies which set out those matters that it feels are important for municipalities to consider in the carrying out of their planning authority. Policy 4.2 explicitly encourages municipalities to establish land use patterns that embody the principles of sustainable development. The Province does not monitor or enforce municipal compliance with the land use policies, and does not review or approve municipal plans, bylaws and planning decisions.

Alberta Environment (ENV) promotes integrated resource management (IRM): an integrated approach to the use and management of the environment and natural resources to achieve sustainable development.

Alberta's public lands are managed by Alberta Sustainable Resource Development (SRD) with the objective of balancing the need to accommodate growth with the government's commitment to protect the public's long-term interest in public lands for environmental and other important benefits. Growth demands are accommodated by issuing dispositions not leading to ownership or, in some cases, selling public land (if surplus to requirements). SRD engages in sub-regional, local and operational planning, and works in conjunction with ENV on regional IRM planning.

Alberta Agriculture, Food and Rural Development (AAFRD) actively participates in the planning systems for both private and public lands.

The Energy and Utilities Board has established minimum setback distances from oil and gas facilities, to provide a buffer zone between the public and a facility in the event of a problem. These setbacks indirectly affect the development of land because the distances are referenced in the Municipal Government Act's Subdivision and Development Regulation sets out procedures to be followed by municipal approving authorities. The Board has also begun investigating how to improve coordination between subsurface and surface planning and development, in relation to public safety and sour gas. One option that may be considered is delaying the conversion of agricultural land to residential use, to allow sour gas to be removed unobstructed.

Enforceable Land Use Policies for Protecting Agricultural Lands

The goal for agriculture in the provincial land use policies administered by Alberta Municipal Affairs (MA) is *to contribute to the maintenance and diversification of Alberta's agricultural industry*. The related policies include encouraging municipalities to: identify areas where agricultural activities

should be a primary land use; limit the fragmentation and premature conversion of agricultural lands; and direct non-agricultural development to areas where agriculture will not be constrained.

The Province's "right to farm" legislation — the Agricultural Operations Practices Act — helps protect agricultural lands by providing an institutional framework for resolving conflicts between agricultural producers and urban/rural non-farmers. Under the Act, farmers meeting specific conditions cannot be prevented from carrying on their operation for reasons of nuisance. The Municipal Government Act requires the protection of agricultural operations to be the subject of policies in municipal development plans, and to be considered in land use bylaws.

AAFRD supports "balanced" land use planning and has long recognized that there are a wide range of important economic, environmental and social interests that must be met within Alberta. AAFRD has monitored changes in the agricultural land base on a five-year basis, since 1978, to help assess the need for stronger land use controls. Past studies have revealed that, while the total acreage of land removed from production is small (approximately one-tenth of one percent for each five-year reporting period), the fragmented pattern of development—along with increased land costs and "not in my back yard" (NIMBY) concerns — are beginning to constrain future intensification of the agricultural industry.

ENV is coordinating regional strategies, which could provide some of the policy context desired (albeit at a regional, rather than provincial scale). As well, the development of the *Water for Life, Alberta's Strategy for Sustainability* by ENV provides a provincial policy context for water management that is highly relevant to the agri-food industry and agricultural land use.

Public lands can be sold by SRD under certain circumstances for various purposes, including facilitating agricultural expansion. Suitability for sale is determined after considering whether the proposed use of the land would conform to provincial and municipal land use policies; the impact of the sale on important resource values (e.g., conservation, recreation); and the availability of private land for uses of economic or social importance.

Through Alberta Economic Development, various regional economic development alliances (REDAs) have identified the protection of agricultural land as a concern.

Technical Assistance in Protecting Agricultural Working Lands

MA provides land use planning and other advice to local governments, on request and through publications. MA contributed funding assistance for developmental work on Alberta's Information Management Framework for Agricultural Regions (AIMFAR) in partnership with Agriculture and Agri-Food Canada. Municipal Affairs also administers the Municipal Sponsorship Program (MSP), which makes grants available to eligible small municipalities for new and innovative projects that improve municipal governance, enhance service delivery or promote inter-municipal cooperation. They also support municipalities and their community and business partners, through the Regional Partnerships Initiative, to form on-going regional partnerships that explore and implement self-determined opportunities for economic growth and service efficiencies.

During the nineties, AAFRD provided more direct services in the area of technical support, resources and tools to assist local governments. Custom mapping of land use, soils and water information was developed on a county specific basis to support land use decision making. Over the last 5 years, there has been a shift to more of a request-based set of activities in this area.

AAFRD recognizes the need for rural municipalities to access spatial land use and resource-based information, and is therefore moving to web-based access to data, making access to information more open than ever before. More recently, AAFRD has provided both technical advisory and spatial data to the Red Deer County Ag Viability Study — an offshoot of AIMFAR — to enhance the preservation of agricultural working lands. AFRD also circulates copies of its land base monitoring studies to all municipal planning authorities/agencies.

Alberta Environment (ENV) collects or ensures collection of monitoring information on air and water quality and on water quantity. That information is becoming more readily available through web access. In addition, ENV uses information from a variety of sources to develop an overall picture of present land uses, to describe current trends and to make future projections.

SRD participates in developing and transferring information on stewardship, sustainable use, and integrated natural resource and livestock management practices, in respect of public lands.

Incentives and Programs for Retaining Sustainable Agricultural Landscapes

The MLA Farm Property Assessment Review Committee recommended in 2002 that land held by non-profit organizations for conservation purposes should be eligible for property tax relief. The committee also recommended that woodlots be assessed similarly to farming operations, on the basis of productive value instead of their market value. The recommendations are currently under government review.

The Municipal Government Act gives municipalities discretionary authority to refund municipal taxes on a particular property or category of property.

Alberta Agriculture, Food and Rural Development (AAFRD) had a wide involvement in land use planning matters in the 1980s and early 1990s but this declined once the networks of regional and general municipal plans were completed. In the past decade, the Ministry has placed increased emphasis on minimizing any potential industry pollution/contamination of the environment, including environmental farm plans.

ENV strategic directions support greater use of economic instruments and voluntary stewardship initiatives. The *Environmental Protection and Enhancement Act* provides the legal basis for conservation easements.

SRD manages public land agricultural dispositions in a manner that assists the sustainable development of the agriculture industry, while responding to the needs of other users and addressing conservation concerns.

Tomorrow's Actions

A Sustainable Land Use Policy and Regulation Framework

The Government Business Plan 2003-06 states that: The Alberta government assists municipalities through policies and programs that encourage the development of strong and vibrant communities. Municipal Affairs' Business Plan 2003-06 states that: The Ministry will increase its focus on the development of policies which enable municipalities to better manage continued growth. Updated land use policies, which incorporate Smart Growth principles, will allow municipalities to better deal with increasing growth pressures and bottlenecks to growth. The Municipal Affairs Business Plan also states that a key strategy is to review provincial land-use policies to determine the applicability of Smart Growth principles. Municipal Affairs staff has begun exploratory consultations within government to help gauge departments' views on the land use policies, and the level of support that exists for the review. As the provincial land use policies review proceeds, it would be appropriate to consider Land Use Core Action Team's (LUCAT) proposal for a sustainable land use policy and regulation framework. Alberta Agriculture, Food and Rural Development (AAFRD) is currently involved with Alberta Environment's (ENV) integrated resource management (IRM) program and has been participating in preliminary discussions with MA regarding review of the provincial land use policies. AAFRD is considering expanding the focus of its Alberta Environmentally Sustainable Agriculture (AESA) Council to incorporate land use planning/policy issues and concerns. The current AESA Council includes representatives from private agricultural industry organizations.

The Agriculture and Food Council (AFC), an industry organization, will be consulting with industry stakeholders in the coming months to seek reaction to the Agrivantage recommendations and to report on any related initiatives in progress or being contemplated. AFC's project will also look at developing a framework for concrete action and industry follow-up to the Agrivantage report, including identification of action/activities to be undertaken by AFC in relation to integrated and comprehensive land use policies and environmental goods and services. The AFC appears to be interested in finding out whether industry perceives land use issues as widespread, or largely confined to the Edmonton-Calgary corridor.

IRM principles are guiding the development and implementation of regional strategies being formulated for the Northern East Slopes and Southern Alberta on a pilot basis. These processes heavily emphasize cooperation, communication and consultation amongst government departments, industry and other governments and stakeholders. The Northern East Slopes Regional Strategy, developed by a government-stakeholder partnership and recently submitted to government, recommends establishment of an ongoing regional stakeholder partnership to address cumulative effects and to advise government. Government is currently considering those recommendations.

LUCAT's recommendation to develop a long term sustainable land use policy and regulation framework raises two issues for the government, whether to pursue "the development of a long term sustainable land use policy and regulation framework," and, assuming a decision in the affirmative, how to go about doing so. At the same time, the absence of an explicit reference to agricultural land implies that it is appropriate for the response to focus on the general structure of land use administration.

Several departments currently have land use planning responsibilities or involvement (Table 1), and there is more than one land use planning process in effect. Moreover, land use planning responsibilities are shared between the Province and municipalities. Any change in the level of provincial review or approval of local land use planning decisions would represent a departure from current policy. Such an initiative would require support from a broad base of provincial departments and other stakeholders.

Table 1 — **Summary of Selected Agencies' Responsibilities Concerning or Affecting Land Use Planning**

Department/Board	Responsibility
Municipal Affairs	Administration of Municipal Government Act delegating land use planning responsibility to municipalities
Environment	Integrated resource management; water management planning
Sustainable Resource Development	Public lands
Energy and Utilities Board	Regulation of energy resource development, pipelines and transmission lines

Even if unenthusiastic about additional regulation, the Province may wish to consider whether the different departmental and municipal planning foci at different scales (e.g., regional and local) should be linked, to facilitate a more harmonized response to land use and resource concerns. Connecting and enhancing the existing frameworks could result in less overlap, duplication and inconsistency in land use matters, and the coordinated promotion of sustainability and other resource goals. A more far-reaching option would be to consider exploring the merits of and need for a more holistic provincial approach to planning at the policy level.

How a long-term policy and regulatory framework could be developed would be a question of implementation rather than principle. However, it is appropriate to comment on LUCAT's call for the framework to be implemented by a province-wide "land use advisory and liaison body" of multi-sector stakeholders, supported by a land use information/education office. (In a subsequent presentation to the response team, one of the LUCAT co-chairs indicated that the advisory body could be regional rather than provincial in scope.)

The improved utilization, or reorganization, of existing provincial, regional and local structures may be just as effective in framework implementation as the creation of a new agency. A comparison of their respective merits could be illuminating. ENV has already developed or supported a number of partnerships (e.g., regional steering groups for regional strategies that could undertake the proposed advisory work, especially at a regional scale. Furthermore, municipal officials could receive additional grounding in best practices for land use decision-making through the professional courses already offered by various organizations. A new body or layer

of administration may generate concerns over bureaucracy and public accountability.

It is a conclusion of this response team that the need for the following:

(i) a detailed interdepartmental review of all ministries' land use planning responsibilities and activities

(ii) identification of opportunities for improved integration and coordination

(iii) remodelling of the present planning frameworks to achieve specific land use policy, planning and sustainability goals

could be determined through the current review of provincial land use policies, or another appropriate provincial initiative.

Enforceable Land Use Policies for Protecting Agricultural Lands

As noted earlier, Municipal Affairs staff has begun exploratory consultations within government on the provincial land use policies review. As the provincial land use policies review proceeds, agricultural land use issues will be among the issues considered, providing a good opportunity for discussion of LUCAT's case for protecting agricultural land through enforceable province-wide land use policies.

Alberta Agriculture, Food and Rural Development (AAFRD) will update its Ministry guidelines regarding the protection of agricultural land from competing land use interests. Agriculture is being squeezed by the growth pressures from urban/country residential developments, and the constraints imposed by the need to protect the remaining sensitive environmental/ natural areas. The balance between these competing uses needs to be reassessed in partnerships with stakeholders. The Land Use Monitoring study could be used as an audit tool for municipalities.

Alberta Environment (ENV) has received the draft Northern East Slopes Regional Strategy and is working with other departments to consider these recommendations. Consultations are complete for the Water for Life, Alberta's Strategy for Sustainability and a final strategy is being prepared. Further regional strategies may be developed, eventually covering all of Alberta.

Working with appropriate departments and agencies, the regional economic development alliances' (REDA's) may address the preservation issue in the context of sustainable development.

Land Use Core Action Team's (LUCAT) recommendation focuses on the need for more rigorous and enforceable protection of agricultural land from alternative economic and resource uses. LUCAT believes that protection is required, and advocates strengthening the provincial land use policies. At present, various departments subscribe, explicitly or implicitly, to the principle of protecting agricultural land. However, agricultural land conversion continues in response to valid demands from competing land uses. When deciding if there is a need for stronger regulatory mechanisms to protect working agricultural lands, the government might wish to assess whether there is sufficient justification to give priority to a particular use—agriculture—bearing in mind the impacts on the other land uses. For example, a constrained supply of rural land for residential use may result in an undesired increase in urban land values and housing costs.

The relationship between land uses is complex and it would seem strongly advisable to review agricultural land use issues in their wider economic and geographic context. The dynamics underlying the pressure on agricultural land need to be understood. The suggestion that the fragmentation of agricultural land may constrain production as much as—or more than—the absolute loss further indicates a need to clearly define the intended purposes of a protection strategy. The government may discover that its agricultural land goals are achievable without resort to rigid protective measures by engaging in localized rather than universal protection, or through the use of economic incentives. (See response to *Incentives and programs for retaining sustainable agricultural landscapes.*)

If the government decides that there should be greater protection, it may choose to evaluate LUCAT's proposal for enforceable province-wide land use policies or other mechanisms to achieve the desired outcomes. Depending on timing and government preferences, there might be an opportunity to include such an analysis in MA's review of the provincial land use policies. MA has initiated exploratory interdepartmental consultations to help scope out proposed review options for the consideration of senior management. It is important to recognize that the current policies address a variety of land use issues, including agricultural issues, and reflect awareness of competing economic, resource and conservation interests in Alberta's finite land base.

It is possible the review could conclude that education and encouragement would be the preferred means for promoting awareness of the various land use policies. Stronger, enforceable provisions may seem to provide greater assurance of provincial interests being truly reflected in local planning measures and activities, but could be perceived as unnecessarily prescriptive and an infringement on municipal autonomy. There is a need for policies that are balanced with the Government of Alberta policy.

The response team recommends that, as the review of provincial land use policies led by Municipal Affairs proceeds, consideration should be given to the need to evaluate the current provincial land use policies as they relate to the protection of agricultural land.

Technical Assistance in Protecting Agricultural Working Lands

This Land Use Core Action Team (LUCAT) recommendation calls for local governments to be assisted technically in protecting agricultural working lands. The Northern East Slopes Regional Strategy has made recommendations for better information management very similar to LUCAT's.

The associated key strategies put forward by LUCAT envisage the Province being the major source of help. The resulting issues for the government are whether it thinks agricultural working lands should be protected; the role of the Province in facilitating such protection; and the availability of the necessary resources.

The need for protection of agricultural land is addressed in the discussion of the recommendation "Enforceable Land Use Policies for Protecting Agricultural Lands."

If protection were deemed to be necessary, the Province would have to consider the forms of operational assistance that it could or should provide in the context of LUCAT's third

recommendation. These could include performing technical and educational roles, as proposed by LUCAT. A definite municipal commitment to agricultural land protection should also be sought. It would be insufficient for the Province to offer advice and assistance without some certainty that its municipal partners will take advantage of the services made available.

Judging from its list of key strategies, LUCAT expects that the Province would provide data, undertake research, and provide continued funding for municipalities to utilize land use planning tools such as AIMFAR. It is not at all certain that the Province would be willing or able to do so.

Performance of these functions by the Province could be construed as an infringement on an area of municipal responsibility. Aside from this, there could be significant cost implications for the Province. LUCAT estimates the total budget associated with the recommendation as being $50,000 per municipality per year over three years. This translates into an annual cost ranging from $3.2 million for municipal districts, to $17.5 million if all urban and rural municipalities except the seven improvement districts are included. LUCAT names seven departments as responsible for implementing its third recommendation but does not indicate how the funding burden would be distributed among these departments.

The government should consider using the review of provincial land use policies to clearly define its position, and what is expected of municipalities, in relation to the protection of agricultural land. As well, it is recommended that, during this review or another process, the government consider whether there is a need for the Province to examine opportunities for improved collection, coordination, and sharing of information on all land uses and resources, to enhance the quality of all provincial and municipal decision-making related to land use and the environment.

A cost-of-servicing study to assess the benefits and costs associated with higher density or clustered development patterns, and fragmented small parcel subdivisions in rural areas should be considered. Participants could include departments with an interest in land use, municipalities and agricultural industry partners.

Incentives and Programs for Retaining Sustainable Agricultural Landscapes

The Government will respond to the recommendations of the MLA Farm Property Assessment Review Committee.

AAFRD will be hiring two senior staff specifically to increase its presence and involvement with land use planning/ policy related issues, environmental policy and land use conflict esolution.

The Nature Conservancy of Canada (NCC) has approached the Province with a proposal to conserve "working landscapes" by partnering with landowners to establish conservation easements on privately owned ranch lands. The NCC envisages provincial investment in the program but the details are unclear.

The issues raised by the recommendation are whether the government agrees that sustainable agricultural landscapes should be retained, and whether it favours exploring the use of various economic incentives as an alternative or complementary implementation mechanism to traditional regulation.

The retention of agricultural landscapes is similar in concept to the protection of agricultural land, and reference should be made to the discussion of the option regarding LUCAT's recommendation on enforceable land use policies.

As for the exploration of economic incentives, AAFRD has already recognized a need to investigate alternative mechanisms to protect and conserve sustainable agricultural landscapes. It would be instructive to examine the feasibility of some of the innovative mechanisms identified by LUCAT as options for discouraging subdivision, including various US and EU protection mechanisms, conservation easements, and the purchase of development rights (PDR) programs. The results of such investigations could assist the government in deciding whether to actively support these economic instruments as a means of keeping land in agricultural use. The work may also indicate how well the goal can be achieved through the use of essentially rural economic mechanisms. It may become apparent that these instruments are more effective when combined with measures to reduce external demand for rural land (e.g., incentives and mechanisms to encourage urban development at higher densities).

A thorough exploration and evaluation of the full range of possible incentives could be very informative, as would a comprehensive analysis of the costs and benefits of retaining sustainable lands for agriculture. Providing rural land managers with incentives not to sell land for residential development may have unforeseen and/or unwanted local and urban impacts.

One of LUCAT's key strategies under its fourth Recommendation is that "the provincial government develop market approaches to land conservation, such as environmental goods and services (EGS), identified in the Environmental Stewardship Action Team (ESAT) report." The Sustainability Response Team's reply to the ESAT report indicates that the Province could play a lead role in analyzing potentially feasible EGS and identifying mechanisms that will attach monetary values to EGS. These market approaches could complement regulatory approaches to land use management.

This response team believes that the Province could consider using the review of the provincial land use policies as an opportunity to clearly set out the government's position, and the government's expectations of municipalities, in respect of the retention of sustainable agricultural landscapes.

As well, this response team recommends continuation of the examination of tools and incentives that has been initiated by AAFRD. The government may also wish to consider undertaking further research into other, complementary incentives or initiatives of a non-regulatory nature, including evaluation of effects, effectiveness and budgetary implications.

Human Resources

A common long-term vision for Alberta's agri-food industry drove the participants in Ag Summit. This vision was the creation of *"A collaborative, positive, competitive business climate that supports the continued growth of a profitable and environmentally sustainable agriculture and food industry in Alberta."*

Ag Summit participants realized early in the process that human resource requirements within the agri-food industry would have to be addressed to realize this vision. The threat and challenges posed by these human resource requirements were captured and reported in *Catalyst for Growth — Framework for Change* document. The main threat was described as the industry's inability to build enough human resource capacity to fuel growth. Action Teams discussed how to deal with this threat and overcome these challenges.

The Ag Summit participants who saw human resources as an looming issue for the agri-food industry were aware that the human resource requirements for this industry include matters that are complex and varied. These matters revolve around the use of semi-skilled people (both seasonal and full time) and the availability of people with specialized skills (low in number and high in demand). Entrepreneurial, management and intellectual issues are also involved.

These same participants understood that, the rural migration into urban centers, the increase in the age of rural people (including land owners), and the reduction in the number of young people who consider the agriculture and agri-food industry as a viable career path as major factors that are contributing to a reduction in workers with the necessary skills.

Ag Summit Recommendations

Developing the people with the needed skills in technology, management and business to keep the agri-food industry profitable was the basis of Ag Summit discussions that led to the recommendations directed at human resource development. The Infrastructure in Rural Communities Action Team recommended that distance learning could enhance agriculture education. The Innovation Strategy for Crop and Livestock Opportunities Action Team recommended that an entrepreneurial approach could be strengthened by training, educating, recruiting and retraining support people. The Long Term Farm Profitability and Sustainability Action Team provided the most recommendations about human resources.

All recommendations concerning human resource development for the agri-food industry can be classified under one of the following themes.

- Recruitment and Retention
- Training and Development
- Management and Leadership Development

The Agrivantage report, Building Tomorrow Together also commented on Human Resource issues. It recommended "The agri-food industry, government and other stakeholders should collaborate in the development of an Integrated Human Resource, Management and Leadership Development Strategy." Agrivantage further defined a strategy that builds on existing initiatives within and outside the agri-food industry.

Yesterday's and Today's Actions

The growth of any industry is dependent on a consistent and appropriately skilled labour force. Industry has a significant role to play in implementing appropriate human resource policies. However, the issue of human resource development for the agri-food industry is not one that can be addressed by a single government jurisdiction or department or solely by industry groups, but rather through the planned and cooperative efforts of these departments and groups as partners. There are many relevant but diverse initiatives and programs currently available through both government and industry. Major existing and planned actions, and recommendations for future direction are presented in the following paragraphs.

Recruitment and Retention

Several provincial government departments work together to advocate employment in agriculture. The Alberta government also works with the Federal government to this end. Human resource requirements in the agri-food industry are continually examined to identify needs. Working with industry, programs are initiated or adjusted to recruit and retain workers to fill those needs.

Providing information to perspective employees and employers about labour requirements and trends in the agri-food industry and the recruitment of skilled labour from other countries was the focus of several recommendations directed to the government.

Providing Information

Some of the government programs that provide information about recruitment and retention follow.

- Alberta Human Resources and Employment (AHRE) provides career, learning and employment information to Albertans through the Alberta Career Hotline, the Alberta Learning Information Services (ALIS) website, print resources and through a network of Labour Market Information Centres and Youth Connections offices. Information resources are also targeted to employers, such as the "Finders & Keepers — Recruitment and Retention Strategies" publication which was released in the spring of 2003.
- The Alberta Learning Information Service (ALIS), website **(www.alis.gov.ab.ca)**, profiles over 500 occupations including a list that was updated in March 2002 of 26 agriculture related careers. This website contains information on salaries, employment outlook and educational programs. The site is supported by Alberta Learning (AL) and AHRE with industry input to content.
- The Labour Force Planning Committee continues to monitor information on labour supply and demand as well as implement the actions outlined in "Prepared for Growth." Led by Alberta Human Resources and Employment, the Labour Force Planning Committee includes representatives from the provincial ministries of Economic Development; Learning; Health and Wellness; Agriculture, Food and Rural Development; Finance; Innovation and Science; Children's Services; Aboriginal Affairs and Northern Development, Community Development and Seniors. This committee reviews forecasts of labour supply and demand, compiles

lists of government actions taken to respond to shortages and identifies and examines potential strategies to further address labour market needs. Key accomplishments in the first year for implementation and the development of a long-term vision for the labour market are noted in the "Year One Report to Albertans" which is posted at **http://www3.gov.ab.ca/hre/lmi/pdf/growth.pdf**

- The focus of Alberta Agriculture, Food and Rural Development (AAFRD) for human resources will be determined through the implementation of the Industry Development Sector's draft Growth Strategy and Alberta's Agriculture Research and Innovation Strategic Framework both of which are included as appendixes B and C. This will involve both government and industry working together towards achieving the industry opportunity to expand the agri-food industry to $20 billion in value added and $10 billion in primary production by the year 2010.

International Recruitment

Because immigration is regulated by the federal government, federal programs exist that recruit skilled and semi-skilled workers from outside Canada. Other programs exist to assist those immigrants upon arrival (e.g., settlement and integration programming). Alberta Economic Development with the assistance of AAFRD is currently implementing new strategies for promoting immigrant, investor and skilled worker immigration into priority areas for the agriculture industry. Some key initiatives and actions that are being used to recruit foreign workers follow.

- The interdepartmental Labour Force Planning Committee's report "Prepared for Growth: Building Alberta's Labour Supply" report at **http://www3.gov.ab.ca/hre/lmi/pdf/growth.pdf** includes the key strategies to increase the number of immigrants to Alberta.
- AAFRD, AED and other Ministries administer the Provincial Nominee Program (PNP) (**http://www.alberta-canada.com/pnp**) whereby Alberta is able to nominate immigrants based on critical skill shortages. Alberta employers, unable to fill skilled positions with Canadian residents, are able to apply for approval under PNP to recruit and retain foreign candidates who are then accelerated through the immigration process.
- The Government of Canada through Human Resources Development Canada (HRDC) provides programs that permit employers to recruit foreign workers needed for the Canadian Labour market (**http://www.cic.gc.ca/english/work/index.html**). These include two specific initiatives used in the agriculture sector.
  - Temporary Foreign Worker Program (TFWP) assists employers to hire foreign workers to address skill shortages.
  - The Mexican Seasonal Agricultural Worker Program assists in addressing needs for labour to ensure that crops are planted and harvested in a timely fashion.
- Alberta Learning and AAFRD are working with employers and the federal government to help meet labour needs in the agricultural sector through the Temporary Foreign Worker Program.
- Alberta Economic Development (AED), through the Economic Immigration Program, (**http://www.alberta-canada.com/bip/index.cfm**) is responsible for attracting foreign skilled workers and business immigrants to Alberta. Alberta Learning is responsible for the coordination of all other immigration programming including Alberta policy on skilled immigrants and temporary foreign workers.
- There are 83 active Community Adult Learning Councils in Alberta. Operating grants through Alberta Learning are available for non-credit programs in ESL, adult literacy, and employability enhancement or community issues. These programs, reformatted in 2001, help support agricultural communities build a labour force from non-traditional sources such as immigration.

Training and Development

Alberta government departments work between departments, with educational institutions and with other organizations to develop training and education programs for the agri-food industry. Since Ag Summit began, AAFRD has established a training and education branch to provide skills development for workers for the primary sector. This branch also works closely with Alberta Learning. Through Alberta Learning there are a range of post-secondary training programs to develop a skilled and educated labour force to assist the agri-food industry's growth.

The Alberta government also actively works with industry and educational institutions to develop formal and informal education for application in the agri-food industry. Individual institutions develop programs, in consultation with industry, for approval by Alberta Learning. New program proposals must show support in employment opportunities for graduates and be supported by the industry. However, enrollment in post secondary agriculture programs has been declining.

Some key initiatives that respond to Ag Summit recommendations dealing with training and educating follow.

- Alberta Agriculture Research Institute (AARI), AAFRD and AVAC Ltd. (a not-for-profit company that develops value-added agriculture in Alberta) have established several professorships at the University of Alberta in support of research and teaching. One of the objectives of these professorships program is to train, educate and retain people in the province for the agri-food industry. Alberta Human Resources & Employment (AHRE) provides adult employment and training programs through the Skills Investment Strategy. The Alberta government provided funding to the Alberta Food Processors Association (AFPA) to implement the 2000 human resources development report "People, Pathways, Possibilities . . . " (http://www.afpa.com/). The report provides a detailed assessment and recommendations about human resources & labour market issues, opportunities and constraints. As a follow-up, an AHRE Labour Market Partnership contract with the Alberta Food Processors Association (AFPA) completed in 2003, assisted in the design of program elements that would support enhanced skill development, recruitment and retention of workers, coordination of workplace training and coordination of industry human resources development with Alberta's food processing industry. Also, in November 2002, AAFRD announced the Alberta Food Processing Skills Development Initiative. AAFRD and the Alberta Food Processors Association (AFPA) are partnering to provide a $3 million skill development fund to assist and enhance the skills of plant workers over three years.

AAFRD continues programs and initiatives that support the training and educational development of an agriculture labour pool. These include:

- The Green Certificate Program **http://www.agric.gov.ab.ca./ministry/** (click on Learning & Leadership then Education and Training) offers apprenticeship style skill based training in primary production. The program is primarily accessed by high school students through the Career Technology Services (CTS) stream. Currently 85 percent of green certificate students are attending high school. The program is also accessed by farm employers to train new staff (15% of the current enrollment).
- Summer Employment programs, in partnership with AHRE through Summer Temporary Employment Programs (STEP) funding, provide work experience skills to complement education through the Veterinary Work Experience Program, the Agricultural Processing Industry Employment Program, and the Summer Farm Employment Program. **http://www.agric.gov.ab.ca/ministry/programs/summer_farm**
- AAFRD Home Study Program (**www.agric.gov.ab.ca/homestudy**) provides self-paced learning for primary producers.
- AAFRD's Business Management and Innovation Branch provides education and training for farm managers on business management topics. Programs are delivered through appropriate public and private partners.
- The Farm Safety program of AAFRD is on the web at **http://www.agric.gov.ab.ca/ministry/** under Learning and Leadership and Health & Safety. It provides preventative information to encourage producers and employers to incorporate "best practice" occupational health and safety guidelines on the worksite.

Developing New Partnerships

To increase the supply of skilled workers for the agri-food industry, industry and government have had to reexamine the following: who they have been targeting to work in the industry; who they have been working with to recruit workers, and the employment opportunities that exist for workers in the industry. This has lead to the creation of some new partnerships. Some examples include:

- Youth Apprenticeship Learning Opportunities Project (YAP) led by Alberta Learning and the Northern Alberta Development Council is an interdepartmental pilot project. It is to increase awareness and participation in career opportunities in the trades and agricultural occupations and motivate students in grades seven to nine to complete senior high and acquire technical and employability skills for these industries. Three pilot sites are scheduled for 2003/04.
- "First Nations Training-to-Employment Partnership Program" in Alberta Human Resources & Employment (AHRE) is underway to help First Nations people obtain the skills they need to find and keep jobs. The new program supports the development of partnerships among the Alberta and federal governments, First Nations people, industry and training providers. There is an opportunity here for the agriculture and agri-food industry to consult with this program for the inclusion of agriculture career streams.
- Alberta Learning, Apprenticeship Branch continues to work with Alberta Pork regarding a possible pork technician program. Industry leadership in this role is essential.

Management and Leadership Development

Agrivantage recognized the importance of sound management and leadership skills for the agri-food industry, which are critical to growth. The Alberta government also recognizes that the agri-food industry requires strong management and leadership skills. Programs are available to ensure this management and leadership development includes components of recruitment, retention, education and training.

Developing Management

- AAFRD provides management programs in cooperation with the private sector. AAFRD's Business Management Innovation Branch is continuing to facilitate development of management skills by delivering the Competitive Advantage Program for Agriculture with Olds College. AAFRD in conjunction with the private sector provides shorter courses in the management Toolbox Series. The farm succession planning program was revised in March 2002 to enable industry advisors to deliver the program to producers.
- Alberta's universities, colleges and technical institutes offer a variety of formal programs in management and business leading to certificates, diplomas and degrees. These post-secondary institutions also have the capacity to offer agriculture specific workshops and organize conferences on leadership and management.

Developing Leadership

- AAFRD is actively participating in leadership development. AAFRD funds the 4-H program (**www.4h.ab.ca**) that has a long history of providing leadership development and basic agriculture production skills for youth. AAFRD has contributed re-investment funds to the 4-H Foundation to create the "Leaders in Agriculture" scholarship program specifically aimed at supporting the education of industry leaders. The Foundation is working with the University of Alberta and agricultural colleges to manage the scholarship program.
- The Rural Education and Development Association (REDA) (**http://www.compusmart.ab.ca./ruraled/**) currently receives a grant through AAFRD to support program development and delivery in management and leadership.
- AAFRD supports leadership training, as defined by individual communities, through grants to agricultural societies.
- In 2002, the Agriculture and Food Council (AFC) established the Innovation in Agribusiness Management Fund (IAMF). The fund focuses on three priority areas. They are: human resource management; risk management; and succession and transition projects that benefit primary producers and farm business managers. Leadership development for the primary sector is a component of the human resource management priority area of the fund. Recently, AFC and IAMF announced the Advanced leadership and Management Development Program whereby primary producers and value-added entrepreneurs are encouraged to enroll in leadership and management courses to enrich their skills and knowledge. The program provides financial incentives to complete these courses and incorporate new information and skills into agri-business enterprises and communities. IAMF is also exploring development of mentoring and coaching opportunities for Alberta producers.

Tomorrow's Actions

Similar to other key industries, a shortage of labour will constrain the growth of the agri-food industry. Even though there are a number of initiatives and programs currently addressing this issue the industry would benefit from a more comprehensive plan. Alberta's draft Agri-Food Industry Growth Strategy (which is included as Appendix B) identifies the lack of HR capacity as an impediment for growth. It is already being addressed by formalizing a network of industry driven organizations and government departments to identify gaps, propose solutions, and advocate for appropriate new or modified programs at all levels of government. Leadership for this network is with people working on the Growth Strategy in the Industry Development Sector of Alberta Agriculture, Food & Rural Development (AAFRD).

Recruit and Retain

Human resource requirements in the agri-food industry are constantly adjusting to a changing global economy. The Alberta government continually works with other government departments, agencies and industry to advocate employment in agriculture. The Alberta government will continue to work with industry to initiate or adjust programs that are needed so industry can attract workers to fill those changing needs. For example:

- AAFRD will continue to seek input from industry for their human resource needs and changes will be relayed to the interdepartmental Labour Force Planning Committee.
- AAFRD, Alberta Economic Development and Alberta Learning will also continue to work with the federal government to address issues of timely immigration, enhancement of immigration opportunities and processes necessary to facilitate new immigration.
- When Alberta Learning's Access Fund becomes available again, AAFRD will promote agriculture as a priority economic sector. This will help to build capacity in post-secondary programs so they attract the right people and thus address the need for a knowledge ready workforce.

Train and develop

The Alberta government will continue to actively work with industry and educational institutions to develop formal and informal education for application in the agri-food industry. Here are some examples of intended actions:

- AAFRD will attempt to include the summer employment programs in the regular business planning and budgeting processes. Over the last two years, these programs have become ad hoc. With planned regular budget support, the programs' design would be an opportunity to improve Alberta's ability to retain skilled and educated individuals to the agriculture industry. Originally developed in 1972 (Summer Farm Employment Program), 1979 (Veterinary Work Experience Program) and 1996 (Agricultural Processing Industry Employment Program), each of these would benefit by a review and redesign to ensure that directions, guidelines and policies enhance the work experience of students who can than seek permanent employment in the industry.
- AAFRD will also investigate the feasibility of increasing the scope of the Green Certificate Curriculum to include agri-food industry sectors that require access to semi-skilled labour. To achieve this objective AAFRD will attempt to secure budget for a Green Certificate Coordinator for a two-year pilot as part of regular business planning process. The Green Certificate Program is a recognized credited program for high school students and is able to provide ready to work graduates for the agri-food industry. Also, the Green Certificate program can provide the skills to enhance the knowledge of those pursuing agriculture complementary occupations such as equipment dealers, feed and service providers, or financial and marketing agents. This supports the development of semi professionals and professionals who may not have agricultural backgrounds. Investigation into the development of such an initiative will be in partnership with Alberta Learning and post secondary institutions. It will be considered as part of AAFRD's regular business planning process.

Agricultural Policy Framework — Renewal Chapter

The Agricultural Policy Framework (APF) — Renewal Chapter has a goal whereby:

(1) Inexperienced farmers will be able to access programs and services that will assist them to acquire the knowledge and skills to become successful farm operators

(2) Established farmers will be able to upgrade their management skills through the renewal chapter.

To address the above goals, the following initiatives will be launched:

- The Canadian Farm Business Management Council (CFBMC) will develop skills assessment tools for primary producers, establish a web-based national directory of courses and learning events, and assist with the development of national consensus on skills.
- The Association of Canadian Community Colleges will develop a process for constructing nationally consistent training programs and materials focused on adult agricultural learners. It will also initiate a national sharing process of learning approaches that are most effective in delivering programs and courses that respond to the needs of traditional learning, non-traditional learners and "hard to reach" adult learners. Also to be developed, are best practice guidelines in establishing and using advisory boards.
- The Association of Canadian Community Colleges is going to profile the student market for agriculture-related educational programs in Canada and work on national curriculum development and sharing.

Management and Leadership Development

The Alberta government continues to identify and help develop strong management and leadership skills required by the agri-food industry.

Developing Management Skills

The Alberta government will participate in a National Sector Council for Agriculture that is being developed.

The Council's role is to:

- Act as a central point for the industry to talk about and address human resource issues
- Develop collective industry effort, cooperate in the development of curriculum and other learning material
- Create skill certification programs
- Support career awareness
- Share best practices.

Industry will be expected to take a lead role in promoting the initiative. Without their support the sector council for agriculture will not exist. Once a council has been established, provincial and commodity groups will participate in steering committees of boards under the national council. One group, possibly the Canadian Federation of Agriculture (CFA) would take a lead administrative role.

AAFRD and the Agriculture and Food Council (AFC) will be partnering to increase opportunities for agriculture/ agribusiness leaders to access enhanced learning options. This project will be completed in conjunction with other programs and initiatives planned through Agriculture Policy Framework — Renewal Chapter.

To improve farmers' and farm families' knowledge and use of beneficial management practices so they can better achieve their business and personal goals, a consulting program has been developed by AAFRD. The kinds of assessments offered include:

- Canadian Farm Business Advisory Service: Three days of consulting time spent to collect financial information, evaluate past income and expenses, identify strengths and weaknesses of the business and discuss goals and objectives. Farmers will than use this information to select a desired option for the future and the consultant will prepare income and expense, and cash flow projections for that option.
- Specialized Consulting Services: Consultant will work with farmer to develop a business plan or specific parts of the plan.
- Planning and Assessment for Value-Added Enterprises: Consultants will work with farmer to develop feasibility assessments and/or business plans for value-added enterprises.

AAFRD will be developing and delivering additional information and programs in the area of business risk management. It will include information on how to assess and evaluate business risks, options for addressing risks, as well as models for accessing and evaluating opportunities. There will be delivery of tools and skill development programs in this area.

Education

Maintaining and enhancing the image and importance of the Agri-food Industry was identified early in the Ag Summit process as an area for action. Several teams felt there are positive stories to tell about the industry in regards to its contribution to Alberta's and Canada's gross national products, high food quality and safety, environmental sustainability, humane animal care and future potential. Despite these contributions and positive features, the agri-food industry feels the public knows little about the opportunities within and the challenges the industry faces. Many Ag Summit participants felt this low profile is hurting the industry and as a result the industry is having difficulty competing with other higher profile industries for resources, capital and manpower. Several Action Teams commented that it is important and timely for government and industry to relay these positive messages about the realities and opportunities in the agr-food industry to students, the general public and perspective employees and investors.

Ag Summit Recommendations

The Image and Importance of Agriculture Action Team (IIAAT), who focused on this topic, made recommendations in two major areas. They were:

- Enhancing agriculture and food information in the Kindergarten to grade 12 (K – 12) school curricula
- Enhancing the public's understanding of the agri-food industry on issues such as food quality, nutrition, food safety and environmental sustainability.

To achieve the desired results in these areas, the action team stated that continued cooperation and teamwork of various government departments and between government and industry would be necessary.

Yesterday's and Today's Actions

Action Team recommendations were directed at the Alberta Government and Growing Alberta (a program of the Agriculture & Food Council which communicates with Albertans about the benefits of the agri-food industry). The Alberta Government was asked to provide leadership in the enhancement of agri-food content in school curricula. Growing Alberta was asked to continue to take the lead enhancing public awareness of the agri-food industry.

Enhancement of Agriculture content in school curricula

The Ag Summit Image and Importance of Agriculture Action Team (IIAAT) initiated action on increasing agricultural content in school curricula. The Team did this by requesting that Alberta Agriculture, Food and Rural Development (AAFRD) and Growing Alberta assess previous and existing agricultural content. The assessment indicated that even though some agricultural content existed in school curricula, the content could be enhanced to better reflect the agri-food industry of today.

To achieve this enhancement of agriculture content in school curricula, a cooperative approach was taken. AAFRD and Growing Alberta hired consultants to prepare a proposal for the placement of agriculture and food information in the kindergarten to grade 9 Social Studies curriculum. Support for this initiative was provided by IIAAT and Alberta Learning. This proposal demonstrated how agriculture could be infused throughout the grades' coursework, which would allow students to learn about opportunities in the agri-food industry in a positive light.

Alberta Learning supported the review by providing guiding principles, timelines, and a draft curriculum. AAFRD also initiated an audit of current resources to determine if resources could be shared in other areas of study such as science courses and Career and Technology Studies at the high school level.

The consultant's review, prepared for AAFRD and Growing Alberta, was shared with industry in December 2001. AAFRD seconded another curriculum review expert to assist in the process of determining opportunities, which include learning outcomes in the development of a curriculum and subsequent supporting resource information.

Growing Alberta, Alberta Agriculture, Food and Rural Development (AAFRD) and the Ag Education Network sponsored a workshop led by Alberta Learning. At the workshop, held in March, 2003, the process for the development of supporting resources was discussed. The intent is to continue to hold liaison workshops such as this at targeted times of resource development. The Ag Education Network is a group that includes representation from commodity groups, school boards, rural municipal governments, agriculture societies. farm supply businesses and cooperatives. Its primary goal is to network among organizations that are concerned about agriculture education and to find ways to enhance agricultural education.

To assist teachers implement the new K – 9 social studies curriculum Alberta Learning, the federal government and AAFRD are assisting to update or develop websites that will provide educators with the necessary resources.

Tomorrow's Actions

Enhancement of Agriculture content in school curricula

The early start and inter/ intra government and industry cooperation has produced some notable successes. Since it was identified that there were opportunities to include agriculture in the kindergarten to grade nine social studies curriculum, agricultural learning outcomes have been imbedded throughout this curriculum. The program is by no means complete and it will continue to be rolled out to Alberta classrooms from 2005 to 2008. Over this period Alberta Learning's, Curriculum and Learning, and Teaching Resources Branches, must continue to be partners in the goals. The continued collaboration between representatives of the industry and commodity groups, Growing Alberta and the Agriculture Education Network will also be required.

Future steps to be taken to enhance the agriculture content in the schools curricula include:

1. Formalization of the relationship: A memorandum of understanding between AAFRD and Alberta Learning will be developed to ensure the ongoing stability of this initiative. This formalized relationship will identify funding and the people in each department that are responsible for making connections at the appropriate times in the curriculum planning process.
2. Professional development: For Kindergarten to grade 9 social studies, ensuring that resources, which support the educational outcomes, are available is a critical next step. This includes, supporting professional development for teachers unfamiliar with the importance of agriculture. AAFRD with the assistance of Growing Alberta will lead this initiative. They will work cooperatively and collaboratively with Alberta Learning, post-secondary institutions (example: for teachers pre-service), school authorities, Alberta Teachers Association, specialists' councils, and Alberta's educational regional consortia network to educate teachers and other professionals on the agri-food industry.
3. Development of resource material: AAFRD will be developing both print and digital resources for use in the classroom. There will be a focus on technology-based resources that provide dynamic information to support emerging issues for the agriculture outcomes included in the curriculum (i.e., ongoing website development and linkages). Commodity groups, Agricultural Societies and other rural community organizations will be encouraged to assist in the development of these materials.
4. Repetition of the model at the grade 10 to 12 level: Within the social studies curriculum, the review of grades 10 to 12 has begun and it is intended that Alberta Learning and AAFRD (in consultation with Growing Alberta) continue with the process developed for Kindergarten to grade 9. The 'image' of agriculture and the agri-food industry will be again addressed in this revision.
5. Expansion beyond social studies: Besides social studies there are other curricula where opportunity exists to develop and incorporate resources and information about agriculture and careers in the agri-food industry. AAFRD and other provincial government departments, in consultation with industry, will identify and address the curriculum connections. Industry will be encouraged to provide human resources for school based activities such as career fairs.
6. Assess the model: There is an opportunity to measure the effectiveness of this model for increasing agriculture knowledge and awareness within the school curriculum. If funds are available a longitudinal study regarding the impact of this process will be initiated.

Enhanced Public Awareness about the Agri-Food Industry

Participants in the Ag Summit process recognized that while it was important to increase the agriculture content in the school curriculum it was equally important to enhance the general public's knowledge and understanding of the agri-food industry. Growing Alberta was targeted to lead a cooperative communications effort between industry and government to provide the public with information on the agri-food industry.

Since the initiation of the Ag Summit process, the government has been very actively providing information to producers, investors and the general public about the agri-food industry and we will continue to do so in the future.

- AAFRD will continue to support the work being done by Growing Alberta. Industry needs to continue to take an active role in the promotion of their respective industry sectors.
- AAFRD will continue to participate in developing promotional material such as the CanWest Global, Edmonton Journal and Calgary Herald articles. One example is "Growing Strong" that featured six full-page profiles on individuals and organizations that have made significant contributions to Alberta's agriculture industry. Another example is a special report on the agriculture industry also appeared at the end of the promotion.
- Alberta Agriculture, Food and Rural Development continue to lay the groundwork on a renewed emphasis on rural development. The Rural Development Initiative is continuing to consult with Albertans and this initiative will play a very important role in the evolution of a rural development strategy for our province.

Growing Alberta

To provide a more complete understanding of how the Ag Summit recommendations concerning public awareness are being addressed, Growing Alberta has provided the following overview of their past, current and future actions.

Growing Alberta's communications program was first established in 1995. It has evolved and progressed significantly over the last three years. Some, but not all, of past noteworthy efforts are:

- *Food for Thought Magazine.* Published three times a year, with over 230,000 copies produced of each issue, Food for Thought bridges the gap between consumer interest and concern and our industry's efforts and commitment.
- *Food for Thought Television.* Aired twice during primetime hours, once in 2001 and again in 2002, Food for Thought Television was a ½ hour television program designed to highlight visually interesting aspects of our industry, addressing issues of consumer interest like environmental stewardship and food safety.
- *Harvest Gala* and the *GALA Awards.* Harvest Gala, the premiere industry event that brings together 1000 industry leaders and representatives to celebrate our industry, enjoyed its fifth anniversary in 2002. The Growing Alberta Leadership Awards (GALAs) are formally announced at Harvest Gala, giving Growing Alberta the opportunity to recognize industry champions and encourage others to follow in their footsteps.
- *Toast of the Harvest.* Designed to communicate directly with Albertans living in some of Alberta's smaller communities, it provided a vehicle for Growing Alberta to communicate directly and indirectly with rural Albertans and encourage them to foster increased spirit, pride and development in their community.
- *Education Initiatives and Efforts.* Growing Alberta acted as a catalyst in working with Alberta Learning ment and the industry to begin the review of agriculture content into the K – 12 Social Studies curriculum.

Communicating with Albertans

Growing Alberta takes its role in communicating with Albertans about agriculture and food very seriously. Over the past year, Growing Alberta has charted out a new philosophical approach to our programming and communication efforts. We will be continuing with many of our successful initiatives like Food for Thought magazine, however Growing Alberta has made a very clear delineation between our efforts to reach out to consumers and our efforts to connect with industry.

Engaging consumers to build confidence in and support for Alberta's agriculture and food industry.

Our efforts to communicate with consumers will center on building dialogue. Establishing a dialogue with consumers is about building trust and credibility, but most importantly, it is a two-way communication effort. Through a dialogue, Growing Alberta can readily and credibly respond to consumer questions, issues and concerns. It also allows us to keep on top of what consumers are thinking, feeling and perceiving about the Agri-food industry. Growing Alberta efforts with consumers will endeavour to communicate key messaging on all industry issues: environmental, animal care, food safety and integrity, evolution away from farming and towards agriculture, etc. This new philosophy will guide our entire consumer oriented programming and efforts in coming years. Some of our efforts will include:

- *Food for Thought*. The magazine will continue to be produced three times a year, and will be expanded to incorporate a regular, email newsletter to interested readers and Albertans.
- *Revitalize* **www.growingalberta.com**. Growing Alberta will revamp our website to make it more consumer friendly and relevant, incorporate an industry, media and kids portion to the site, and build in more response and engagement vehicles to allow Growing Alberta to better track visitors and maintain a web-based relationship with them.
- *Consumer trade shows and events*. Growing Alberta needs to communicate with Albertans at a grassroots, face-to-face level. Through presence at and strategic tradeshows and events, Growing Alberta will connect directly with consumers and talk to them about the industry in a way that is relevant to them.
- *Advertising*. Selective advertising will be used to reinforce the image and brand of Growing Alberta and communicate key messaging on our industry's issues and commitment.
- *Education Initiatives and Efforts*. Growing Alberta is pleased with the work the industry has been able to accomplish thus far through collaboration with Alberta Learning and AAFRD, on increasing and improving agriculture outcomes in the K-9 Social Studies curriculum. Growing Alberta has hired a consultant to continue the development of this collaboration, to focus on resources for the social studies curriculum from K-9, and review inclusion in the high school social studies curriculum.

Developing Effective Industry Champions and Allies (Allowing Industry Messages to Reach Consumers Indirectly)

Growing Alberta will be making a concerted effort to build effective industry champions and allies. Growing Alberta will attempt to build capacity in the industry to speak about and on behalf of the industry's efforts and commitments. Some of our efforts will include:

- *Industry Communication Tool Kits*. Growing Alberta will develop and distribute a tool kit for leaders and representatives working in Alberta's agriculture and food industry to arm them with key messaging and industry facts allowing them to speak directly to consumers.
- *Speakers Bureau*. Growing Alberta will continue to present to business and community audiences on the issues, value and economic impact of agriculture and food in Alberta.
- *Media Relations*. Growing Alberta will begin to engage in proactive relationship building with key urban and rural media to encourage and assist them in reporting and writing on agriculture and food related issues.
- *Harvest Gala* and the *GALA Awards*. This important industry event will continue with an increased emphasis on building greater messaging on our industry into the event and program. The GALA Awards will be expanded to ensure greater industry and non-industry coverage and awareness of the winners and their stories.
- *Government Relation*. Efforts to ensure our elected representatives at all levels are aware of our industry's importance and economic impact will continue.

Food Safety

Food safety was a significant issue identified through the Ag Summit process. Alberta's agri-food industry is recognized for its high standards and has a global reputation for safe, quality food. Maintaining and enhancing the public's knowledge and confidence in the safety of our food supply was seen as a crucial factor for the diversification and expansion of the industry

During the initial Ag Summit consultations two significant issues were identified as having influenced the participants. There was a growing trend amongst consumers where they perceived significant food safety issues associated with the development and application of biotechnology and there were a number of recalls of food products due to bacterial contamination.

Several key challenges were identified, for the agri-food industry in the early stages of the Ag Summit. They were:

- The industry needs to better understand and respond credibly to consumer concerns through information education and effective labeling.
- The Industry and government must ensure that claims of safety and quality can be substantiated in every way possible.
- The Industry must work collaboratively with organizations concerned with food safety and food quality to address the real issues of consumers.

To address these challenges the Supply Chain Food Safety Action Team was formed. The Team focused on:

- Involving all sectors of the agri-food industry in best management practices, trace back, education and information dissemination.
- Developing an action plan to:
  - Establish a systems approach to trace back on products/ processes.
  - Formulate a food safety response network to scan for emerging issues.
  - Develop a framework for supply chain food safety

Ag Summit Recommendations

The five-year goal of the Supply Chain Food Safety Action Team was for Alberta to have a proven global track record for providing consistently high quality, safe food products to domestic and international markets. The Action Team's recommendations towards these goals can be categorized into five major themes:

1. Producer implementation of on-farm food safety programs.
2. Increased linkages between producers, processors, wholesalers, transporters and retailers within the food continuum and government agencies involved in safe food production.
3. Increased consumer awareness of food safety issues.
4. Consistent food safety policies and standards enforcement.
5. The ability to trace food products throughout the continuum.

Yesterday's and Today's Actions

Food safety has been recognized as being integral to the growth and sustainability of food production in Canada for some time, federal and provincial government departments have continued to address food safety issues that contribute to achievement of Ag Summit recommendations.

Alberta Agriculture, Food and Rural Development's (AAFRD) Business Plan goal "Continued Excellence in Food Safety" supports food safety initiatives. Key to this goal is the facilitation and implementation of food safety process control systems on the farm, in food processing facilities and for transportation, storage and distribution entities. Alberta Health and Wellness, regional health authorities and the Canadian Food Inspection Agency work together with AAFRD to make progress on other initiatives that focus on establishing baseline measures and ensuring compliance to food safety standards. Accountable baseline measures are being established through surveillance. Compliance is being ensured through education, investigation and, if necessary, prosecution. The Agriculture Policy Framework, signed in June 2002, identifies targets, indicators and outcomes in the Food Safety and Quality Sections that are consistent with Ag Summit recommendations. Federal and provincial governments are committed to achieving these targets, indicators, and outcomes. Provincial initiatives contribute to the achievement of a national vision on food safety.

On-Farm Food Safety

AAFRD continues to support excellence in food safety by facilitating networks and providing funds to commodity groups in Alberta as they adopt and implement national on-farm food safety programs. The mechanism chosen to guide implementation is through the formation of not-for-profit corporations linked to commodity associations. Technical support and funding is provided through Food Safety Division, AAFRD. In Alberta, pork, chicken and egg laying industries have made the most progress in adopting on-farm food safety programs. The beef industry has begun to roll out their on-farm program in Alberta feedlots. Technical material for the cow calf sector continues to be developed. Other commodities such as dairy and animal feed production are making similar progress. The provincial and federal governments participate in a recognition process that includes technical reviews of all on-farm food safety programs. Federally provided Canadian Adaptation and Rural Development funding is provided for the development of on-farm safety programs that are national in scope.

Strengthening Linkages

The Supply Chain Food Safety Action Team developed a recommendation directed towards strengthening linkages between government agencies that are responsible for food safety with industry stakeholders who produce or handle food products so that each participant gains a better understanding of their respective role in the food continuum.

Monitoring, participation, and funding programs continue to strengthen linkages through the food continuum. Monitoring of food safety related market issues is maintained by AAFRD.

Information related to international market adjustments in food safety to producers and processors through industry organizations such as Alberta Food Processors Association and individual commodity organizations is also monitored. Ongoing participation in industry-sponsored coalitions such as the Canadian Supply Chain Food Safety Coalition (CSCFSC) maintains contact with players in the food continuum. During these meetings with CSCFSC, which is sponsored by the Canadian Council of Grocery Distributors, common issues in food safety are discussed. Partnerships also continue to be funded by AAFRD that improve communications and coordination between agencies that oversee food safety. The Canada Alberta Partners in Food Safety; which includes AAFRD, Alberta Health and Wellness, the Canadian Food Inspection Agency and Health Canada; meets regularly to bring forth ways of improving consumer awareness and address specific common concerns in food safety. Concerns have included emergency preparedness and response, the role of laboratories in the province, education and training and communication for consumer awareness.

Consumer Awareness

Direct funding and co-sponsorship of information lines and the release of educational materials keep consumers aware of food safety concerns. Direct monetary grants from AAFRD's, Food Safety Division (FSD) support the not-for-profit corporation called the Food Safety Information Line. Their publication production and the distribution of their information and materials throughout Alberta at exhibits and fairs are supported through co-sponsorship from the FSD. Educational materials on food safety are also released from the Canadian Food Inspection Agency. Materials, designed for distribution to children in schools, about safe handling of food and consumer's responsibility in food safety were recently released.

Consistent Food Safety Policy and Standards

To encourage consistency in legislative interpretation, AAFRD and Alberta Health and Wellness (AHW) developed common Meat Facility Standards. These standards are science based and mirror the pre-requisites for implementation of a Hazard Analysis Critical Control Point food safety process control system. Both agriculture and health jurisdictions now require of licensed or permitted meat facilities in their jurisdiction to meet the same standards regardless of location within the province.

There has also been increased coordination between Alberta and federal agencies through Canada Alberta Partners in Food Safety (CAPIFS), a forum that brings together AAFRD, AHW, the Canadian Food Inspection Agency (CFIA) and Health Canada with representatives from the regional health authorities. This forum is to address and resolve issues and develop common policies regarding safe food process control systems in the province when food borne illnesses or threats are traced back to food produced in Alberta. In addition, both AHW and AAFRD have representatives on national committees such as the Canadian Food Inspection System Implementation Group and the Federal/Provincial/Territorial Agri-Food Inspection Committee. These committees and their technical subcommittees address technical issues and develop model national regulations and codes for provinces to adopt in their legislative framework for food safety. Both AHW and AAFRD continue to use these models regulations and codes when reviewing provincial statutes pertaining to food safety. Finally, collaboration between the Prevention and Investigation Unit of the Food Safety Division of AAFRD and regional health authorities has strengthened significantly when dealing with food safety complaints, issues, education and awareness through this increased coordination.

Enabling the Ability to Trace Products throughout the Food Continuum

Since the Ag Summit, it has been recognized that any system that traces food from farm to plate needs to be national in scope. Therefore, provincial activities in this area have been limited to participation in national workshops and committees struck to begin design of a national system.

Tomorrow's Actions

The Government of Alberta continues to develop or provide programs and foster relationship which will ensure food safety that is integral to the growth and sustainability of food production in Alberta. Food safety initiatives are supported in the Alberta Agriculture, Food and Rural Development Business Plan goal "Continued Excellence in Food Safety." To respond to Ag Summit recommendations, continuing government initiatives are described below under the headings of the five major themes that were used to categorize this section's Ag Summit recommendations.

On-Farm Food Safety

The Alberta government will continue to support provincially based commodity groups and organizations as they adopt on-farm safety programs. Assistance will be provided to develop the infrastructure needed for on-farm audits with the view that the cost of audit systems must be reasonable for producers. Through the Agriculture Policy Framework, the federal government will continue funding development of national on-farm food safety programs. Future agendas include risk management as it relates to product liability and insurance, maintenance and up-grading of on-farm food safety programs, neutral third party auditing and baseline surveillance activities that are designed to monitor effectiveness of on-farm safety systems in reduction of food borne pathogens.

Strengthening Linkages

The Government of Alberta intends to continue fostering relationships and linkages between commodity groups, producers, processors and others participants in the food production continuum and between various government entities through programs designed to facilitate implementation of food safety process control systems. A workshop aimed at food safety professionals in the industry is held in November 2003. The workshop is being delivered by AAFRD and other organizations such as the Canadian Institute of Food Science and Technology and the Agricultural Institute of Canada. It will bring together a variety of stakeholders in the food continuum to further a common understanding of global food safety issues, respective roles and responsibilities in food safety, intervention strategies and biosecurity. This initiative fulfills the original recommendation for such a workshop.

Consumer Awareness

In an effort to provide consumer oriented food safety information AAFRD will continue to support the Food Safety Information Line (FSIL). AAFRD supports the FSIL bid to expand through networking and partnerships that will develop a national network.

Enabling the Ability to Trace Products throughout the Food Continuum

Alberta Deputy Premier and Minister of AAFRD signed the Agriculture Policy Framework (APF) Implementation Agreement on June 4, 2003. The agreement sets the stage for food safety process control systems to be adopted and implemented throughout the food continuum. These systems are based on international principles of the Hazard Analysis Critical Control Point. Implemented systems will also provide the bases for consistent policy and standards across Canada for small and medium sized facilities that are currently governed by provincial and municipal authorities. The APF will also detail federal provincial cost sharing outcomes, targets, indicators and measures and should compliment the direction of the AAFRD Business Plan food safety sections.

Systems to trace food products will be developed nationally for all commodities. These systems are a major component of the APF and the Implementation Agreement. Provincial government and industry roles in development and implementation of these systems have yet to be determined however industry meetings are happening and common standards for traceability are being set.

Sustainability

Recent surveys (Sloan, AE. 2001[2], Ipsos-Reid. 2002[3], Canada West Foundation[4]) indicate that citizens expect agricultural producers to provide public environmental goods or products such as clean air and water, healthy soils, wildlife habitat and an aesthetically pleasing landscape. The term "Environmental Goods and Services" (EGS) is applied to these public environmental products whose value is not currently recognized in the traditional marketplace and therefore provide no direct economic return for agricultural producers.

Although, most farmers and ranchers realize they need to be good stewards to sustain their businesses, the Ag Summit Environmental Stewardship Action Team (ESAT) drew attention to the cost associated with providing these public environmental products. According to ESAT, all Albertans should recognize the value of EGS produced on-farm. The following list is a summary of benefits for producers, the agricultural industry and society from the ESAT report. An EGS program will:

- Add diversity to the agricultural industry income through price signals from the marketplace
- Recognize, reward and enhance good environmental stewardship
- Provide society with better value for existing resources (i.e. a reallocation of resources to achieve environmental benefits)
- Enhance the resource base for agriculture and strengthen rural communities
- Build better understanding of the environmental benefits that agriculture provides and recognize their costs
- Create wetlands and improve watersheds, riparian areas, groundwater recharge, wildlife and fisheries habitat, recreational opportunities, and eco-tourism potential overall
- Put Alberta in the lead of Canadian provinces as we strive to catch global competitors who are gaining competitive advantage by valuing environmental benefits from agriculture.

The Plan outlined in the ESAT Report is designed to create opportunities for new value-added environmental products that consumers expect. From ESAT's perspective, their Plan:

> *"will provide long-term environmental and financial benefits from an improved resource base, thereby sustaining the agricultural industry. Society, . . . will have the opportunity to purchase (share the cost of) a variety of environmental goods and services, along with food, . . . and feel they are helping to sustain the environment."*

A joint sub-committee of the Alberta Environmentally Sustainable Agriculture (AESA) Council, and the Agriculture and Food Council (AFC) reviewed the ESAT Action Plan. The sub-committee applied a risk assessment to implementing an Environmental Goods and Services program in Alberta, based on the ESAT Action Plan. The sub-committee concluded that for an EGS program to be successful, broad-based support and meaningful participation of all stakeholder ministries, industries and non-government organizations is essential. Government participation in an EGS strategy outlined in this document takes this into consideration. The same joint sub-committee (AESA and AFC) and the ESAT chairs also provided feedback and endorsed the strategy described in this government response.

Ag Summit Recommendations

The Environmental Sustainability Action Team's (ESAT) basic premise was that land managers are bearing the majority of the cost of providing Environmental Goods and Services (EGS) while society derives benefits without having to pay their direct costs. If this continues unchanged, land managers may not be able to afford to maintain EGS or could make choices that deplete them.

Therefore, there is a need to develop mechanisms that would allow land managers to enhance the public resource while receiving payment to offset some of their costs for providing EGS.

To satisfy the need for mechanisms that would allow agricultural land managers to receive payment for EGS, the ESAT developed an Action Plan that identifies and provides mechanisms for society to share in the cost. The ESAT plan outlines four goals that are staged to facilitate understanding and acceptance by all stakeholders. The four ESAT goals are:

Goal 1: Land managers understand the present and potential benefits and financial opportunities from producing EGS.

Goal 2: Society accepts that managers of agricultural landscapes and viable rural communities help to achieve everyone's environmental goals.

Goal 3: EGS provided by managers of agricultural landscapes have value through market-based solutions, incentives and other economic instruments.

Goal 4: Policy barriers that limit the development of EGS are identified and removed.

ESAT also made recommendations relating to process and strategy that they felt would expedite the implementation of their plan. Their recommendations include the following.

- The Action Plan should be fast tracked so the results could be used to develop new federal and provincial initiatives.
- The Pembina Institute be commissioned through the Ag Summit process to conduct a third party audit of the ESAT Action Plan for technical, budgetary and time aspects.
- The government establishes a trust fund for financing the transition to economic and fiscal EGS instruments beyond the pilot work in the ESAT Action Plan.

[2] Sloan, AE. Top 10 Trends to Watch and Work On. 3rd Biannual Report. Food Technology. Vol.55, No.4.pp. 38-58 Available from **www.ift.org/publications/docshop/ft shop/04-01/04 01 pdfs/04-01-toptrends.pdf**. Internet. Accessed 30/01/03.

[3] Ipsos-Reid. 2002. New Thoughts for Food: Consumer Component. Final Report. Prepared July 8, 2002.

[4] Worbets, B and Berdahl, L. 2003. Western Canada's Natural Capital: Toward a New Public Policy Framework. Canada West Foundation. www.cwf.ca

The Ag Summit recommendations expressed by the ESAT Plan and Goals and process/strategy recommendations are addressed in the Government Response section of this report.

Yesterday's and Today's Actions

Over the last couple of years, Canadian agricultural organizations and some governments have been identifying ways for agricultural producers to enhance the provision of Environmental Goods and Services (EGS) through a mix of policy tools and other mechanisms. Our global competitors have been using these market-based mechanisms such as permit trading or incentives for years.

Some of these mechanisms use public dollars to fund EGS, while others rely on the marketplace to provide incentives for enhanced stewardship through EGS. For example, the Environmental Quality Incentives Program for Agriculture in the USA which uses public dollars leads to more efficient irrigation systems, better nutrient management of crops and livestock, increased alleviation of soil erosion and land protection. In the United Kingdom private market based mechanisms such as Permit Trading for reducing greenhouse gases results in reduced tillage practices. See the Appendix for more examples of market based mechanisms operating around the world.

According to "Impacts on Competitiveness from Economic Incentives" (Economics & Competitiveness Unit, 2003[5]) competitive advantages can be realized through the use of economic instruments to promote the adoption of beneficial management practices. Advantages include cost effectiveness, stimulation of environmental and technological innovation, and satisfying an increasing demand for products and promote continuous improvements in the industry. This is particularly true for those sectors whose environmental emissions are non-point source in nature (i.e. agriculture with broad, land-based activities as opposed to 'end of pipe' or 'end of stack type' emissions).

Over the past decade, there have been a number of initiatives at the federal, provincial and municipal levels that provide financial and other incentives to landholders for adopting environmentally Beneficial Management Practices (BMP). This is a logical step in the development of a market based EGS program. According to Dr. Andre Plourdes, Alberta School of Business, University of Alberta (AESA Council Conference 2003[6]), economic research has shown that markets for EGS do not emerge on their own. They must be facilitated or kick-started by government with transitional funding.

It's generally believed that developing markets for EGS would be a:

- **Win for Economics** — agricultural producers are rewarded for providing EGS
- **Win for Environment** — environment is enhanced
- **Win for Society** — society gets more long-term value at less cost compared to *ad hoc* programs.

Table 1 demonstrates examples of EGS initiatives/economic instruments underway in Alberta. These initiatives are provided by various levels of government and are consistent, in principle, with recommendations in the Environmental Stewardship Action Team (ESAT) Action Plan.

Table 1 — Current EGS and Related Programs for Alberta

Initiative	Type of Market Mechanism	General Description	Results
Municipal			
County of Barrhead 1990 to present	Property tax rebate	Agreements are signed to assist in retaining natural areas.	Several thousands of acres of natural areas have been set aside — habitat conserved
Municipal District of Rocky View 1990-1996	Property tax rebate	Farm Plan required for eligibility 3 options; 1) crop residue improvement, 2) new shelterbelts, 3) permanent cover.	Soil stabilization Habitat provisions Well received by agriculture community
Provincial			
Landowner Habitat Program	Acreage based incentives (annually) Leasing arrangements	Started in 1989 and 1990 the Fish and Wildlife Division of the Alberta Government offered the Buck for Wildlife program.	Habitat conserved. Program has been maintained, expanded and sustained by the Alberta Conservation Association.
Alberta Environment Delegated Administrative Organizations	Environmental handling charges to fund recycling initiatives.	Tire Recycling Mgmt Association Alberta Used Oil Mgmt Association	Tire Recycling Used Oil Materials Recycling
	Deposit/ Refund Systems	Alberta Beverage Container Recycling Corporation	Recycling Beverage Containers

[5] Available from Alberta Agriculture, Food and Rural Development.

[6] Who's rewarding stewardship, AESA Conference, Red Deer, March 2003.

Provincial continued			
Conservation Easements	Acreage based incentives	Agreements between qualified conservation agent and landowner that provides payments to compensate landowners for restrictions on land use	Conserve, protect or enhance habitat and scenic resources as well as conserve land used for recreation.
Woodlots	Property tax rebate	Producers are encouraged to grow trees on marginal agricultural land.	Increased biodiversity, providing habitat, sequestering carbon.
Pesticide Container Collection Program 1980 to present	Program funded by private agency, Crop Life Institute	Government-industry partnership, now managed by the Crop Life Canada (nee Crop Protection Institute) to recycle containers	Ninety-nine permanent collection sites and over 100 temporary sites in Alberta. They provide opportunity for easy recycling, offsetting the costs to producers
Federal			
PFRA* Permanent Cover Program 1990s to present	Acreage based incentives	To establish perennial grass on erosion prone soils. Seeding and maintaining cover paid for in long term contracts	1.2M acres of the 20 M possible were removed. Soil stabilized and habitat conserved
The North American Waterfowl Management Plan (NAWMP)	Acreage-based incentives Leasing Based on BMP adoption	An international joint government/ industry program for restoration of wetland and upland habitat waterfowl	Operating Canada-wide for 15 years and spent $500 M Total of 1,334,230 acres of upland and wetland habitat conserved.

*PFRA — Prairie Farm Rehabilitation Administration

Both ESAT and the partnership of the Alberta Environmentally Sustainable Agriculture Council and the Agriculture and Food Council agree that there needs to be effective coordination and implementation of EGS initiatives. More recently, the Canada West Foundation has added their voice to the need for more coordination and public policy on EGS in Western Canada.[7]

One example of inter-agency collaboration and coordinated public policy is the Ag Policy Framework, Environment Subchapter. It is coordinated between Federal and provincial governments across Canada and provides incentives for EGS produced on-farm. The Environment Subchapter's program starts with producers completing a voluntary Environmental Farm Plan. The Environmental Farm Plan is a risk-based, self assessment checklist that producers use to identify their management practices that may affect the environment. With a completed checklist the producer develops an action plan to address the identified areas of risk. Then the producer can identify Beneficial Management Practices (BMP) that address the identified areas of risk and apply for incentives to implement the BMP (i.e. EGS).

Tomorrows Actions

Current research into the competitiveness implications of economic instruments for environmental performance generally indicates that these instruments do not have a negative impact on competitiveness. There is considerable information to suggest they in fact have a positive impact (Impacts on Competitiveness From Economic Incentives" Economics & Competitiveness Unit, AAFRD, 2003). The Alberta government recognizes the potential value of Environmental Goods and Services (EGS) in helping to sustain the environment. As such, new initiatives that may provide market mechanisms to land managers to enhance the production of Environmental Goods and Services are being considered.

Moving Towards Environmental Goods and Services

There is increasing interest in market mechanisms that provide incentives that lead to the maintenance and enhancement of the environment in Alberta. Examples of these market developments for Environmental Goods and Services (EGS) can be found in the Agricultural Policy Framework (in concert with the federal government), Albertans and Climate Change: Taking Action and "Water for Life, Alberta's Strategy for Sustainability" These strategies and programs will likely provide mechanisms for land managers to be paid, in part, for EGS (carbon credits, water rights and incentives for beneficial management practices). Table 2 provides details for these and other developing EGS.

[7] Worbets, B and Berdahl, L. 2003. Western Canada's Natural Capital: Toward a New Public Policy Framework. Canada West Foundation. www.cwf.ca

Table 2 — **Examples of Developing EGS and Related Programs for Alberta**

Initiative	Type of Market Mechanism	General Description	Results/Anticipated Results
Agriculture Policy Framework (APF) Environment Subchapter	Beneficial Management Practices (BMP) based incentives	**BMP Incentive Program** BMPs that reduce risk to the environment will be supported through the Environmental Farm Planning (EFP) Process	**Activities:** Programs developing Agreements signed Improved uptake of EFPs; improved soil, water, air
	Acreage-based payments for Green Cover	**Green Cover Program** BMP Incentives for riparian and grazing mgmt, shelterbelts and fragile land conversion through EFP	Habitat conserved Fragile lands conserved Carbon services provided
	Cost shared	**National Water Supply Expansion Program** Sustainable water supply initiatives	Enhanced and sustained water supply for drought affected areas Water conservation initiatives funded
Provincial — Albertan's and Climate Change: Taking Action	**Includes:** Emissions Offset Trading System BMP-based incentives	Rules and offset protocols for an Emissions Offset Trading system for agriculture to complement reduction targets of Greenhouse Gases (GHG) emitting sectors Incentives for GHG sequestering BMPs	**Activities:** Western Canadian Offsets Team formed Interdepartmental Sinks Team formed Bill 37 Climate Change and Emissions Mgmt Act. **Anticipated Results:** Carbon services provided Alternative and renewable fuels Emissions Offset Trading System
Provincial — Alberta Environment	**Market Based Mechanisms** (economic instruments)	Examining the use of flexible regulatory and non-regulatory tools such as incentives and market-based mechanisms to encourage production of EGS	**For agricultural producers** — may result in further opportunities for reducing greenhouse gas emissions, improving air quality and improving water management.
Provincial — Alberta's draft Water for Life — Alberta's Strategy for Sustainability	**Market Based Mechanisms** (economic instruments)	Water allocation transfers through market trading, potential development of water pricing mechanisms, and possible incentives for conservation through partnerships with AB Environmental Farm Plans, Cows and Fish, Alberta Environmentally Sustainable Agriculture Program (AESA)	Identifies a number of EGS opportunities where market based mechanisms would be beneficial for water management.

As stated earlier, for an Environmental Goods and Services (EGS) program to be successful, broad-based support and meaningful participation of all stakeholder ministries, industries and non-government organizations is essential. In addition, buyers' (i.e. the general public) and 'sellers' (i.e. providers of EGS) must have a clear understanding of the environmental benefits of EGS in the marketplace in order to have a viable program. The market mechanisms underway in Alberta may not fulfill all of these requirements and may not be tailored appropriately for agriculture.

The strategy outlined in the next section provides a roadmap towards a strategic approach that involves broad-based support.

Government Response to the ESAT Plan

The Alberta Government will support the Environmental Sustainability Action Team's (ESAT) recommendations by funding a feasibility study that will evaluate a proposed joint industry-government Environmental Goods and Services (EGS) strategy.

This Feasibility Study will:

1. assess the willingness of Albertans and industry to participate in an EGS program;
2. scope other sectors' EGS activities and assess partnerships that can be built for private-based program support;
3. identify potential industry (agriculture and non-agriculture) commitments for matching dollars to support the Plan

4. assess cost estimates for the goals/steps in the ESAT Plan based on potential partnerships and the experience of others around the globe; and,
5. identify the most efficient and cost-effective way to deliver the program, in partnership with public and private agencies.

A joint industry-government committee will be responsible for the feasibility study. The committee's work will be resourced from existing government and industry resources (approximately $150,000) and will be complete by January 1, 2005.

The feasibility study will provide an analysis of the costs, potential partners, levels of private/public commitment (including dollars), roles and responsibilities of potential partners in the proposed EGS strategy.

In their Ag Summit report, ESAT suggested that the roles of stakeholders were:

- Government and academia provides marketing/ environmental research to develop meaningful policies that enable markets to emerge
- Industry markets and/or promotes the concept/program to stakeholders

The proposed joint industry-government EGS strategy or 'straw man' is presented in Figure 1. This strategy, based on a staged approach to implementation, would accomplish the goals identified by ESAT. The related tasks to each of the Goals/Steps are outlined in Tables 4a through 4d. The feasibility study will assess this staged strategy with stakeholders, including the timelines (left side of Figure 1) and suggested roles of the government and industry and other stakeholders.

Goal/Step 1 of the proposed strategy — **Assessing Supply** is expected to:

- identify current and potential EGS provided by agricultural producers in Alberta,
- determine what producers know about EGS, and
- communicate information on EGS to producers.
- develop an inventory of EGS
- determine if land managers are willing to accept payments for the specific EGS that they produce from their lands, to what level and through what mechanisms
- increase producer awareness of EGS

Goal/Step 2 — **Assessing Demand** is expected to determine what EGS the public desires as well as their willingness to pay for them. Combined with Goal/Step 1 these two coordinated steps will identify if there is support for the concept and what EGS Albertans desire and whether agricultural producers can supply them.

Goal/Step 3 — **Market Options for EGS** is intended to assess market-based mechanisms and financing options for EGS. It is suggested that this step will only occur if Goal/Steps 1 and 2 show strong producer and public support for EGS and identify what EGS have value and what that value may be. Potential funding sources will also be assessed.

Goal/Step 4 — **Identifying and Removing Policy Barriers** will identify and remove policy barriers that limit the provisions of EGS.

Estimated Time Lines

Estimated time lines to complete the Goal/Steps are:

- one to two years for Goal/Steps 1 and 2 (includes some overlap of timelines).
- three to four years for Goal/Steps 3 and 4.

Funding to Kick-Start the Environmental Goods and Services Strategy

According to Stewardship America[8], (an eight-year-old nonprofit charitable organization working to advance initiatives that will engender a thriving rural economy with an sustainable, robust agriculture) public dollars can accelerate the establishment of market-based incentives, and can help expand protection of environmental resources. Their Rural Lands Stewardship program offers the following simultaneous benefits:

- Incentive based
- Maintains asset value of rural lands
- Preserves open space for agriculture and natural environment

During establishment of most Environmental Goods and Services (EGS) strategies there is a transition to private industry funding (up to five years for the strategy described in this report). The feasibility study will address whether government dollars are necessary to kick-start or if a combination of private/public funds are more efficient. The Environmental Sustainability Action Team envisioned that private funds would be the main long-term support of EGS.

Instructions for Figure 1 and Tables 4a – 4d

It's proposed that the Environmental Stewardship Action Team (ESAT) goals will be fulfilled by completing the tasks expressed in Figure 1 (joint industry-government Environmental Goods and Services (EGS) strategy). These tasks are related to ESAT goals in Tables 4a through 4d. The resources needed and estimated shared costs (between government and industry) will be provided in the feasibility study. Lighter shaded task boxes simply suggest where government may provide most of the resources (government lead). Darker shaded boxes suggest where resources could be shared among stakeholders (government support). Boxes with no shading suggest that Industry will lead and no resources will be needed from government.

With respect to the ESAT recommendations on process and strategy to implement the proposed EGS plan, the government response is outlined in Table 3.

[8]The Stewardship America website can be accessed at http://privatelands.org/RLSP/

Table 3 — **Response to Environmental Stewardship Action Team's (ESAT) Process and Strategy Recommendations**

ESAT Recommendation	Government's Response
ESAT recommends that industry enable the fast tracking of the ESAT action plan to ensure effective and immediate coordination, implementation and integration with developing federal, provincial and local initiatives.	The provincial government recognizes that the Alberta Environmentally Sustainable Agriculture (AESA) Council, in partnership with the AFC, has completed an EGS strategy review and agrees with ESAT that there needs to be effective coordination and implementation of EGS initiatives. It is important to proceed with the staged plan described below and identified in Figure 1.
ESAT recommends that industry commission the Pembina Institute for a third-party expert audit of the ESAT Action Plan for technical, budgetary and time aspects.	The provincial government feels that an independent third party review of the ESAT Action Plan has already taken place through the risk assessment undertaken by AESA/AFC sub-committee. The subcommittee has value added to the ESAT Plan envisioning a system that will build an EGS program, which offers rewards for agricultural producers.
ESAT recommends that government establish a trust fund for financing the transition to economic and fiscal EGS instruments beyond the pilot work in the ESAT Action Plan.	The provincial government feels this is premature and will only consider looking at the establishment of a funding mechanism after it decides to move forward with the program.

Figure 1 — **Steps in Building a Proposed EGS Strategy for Alberta (see Table 2 and 3 for more information).**

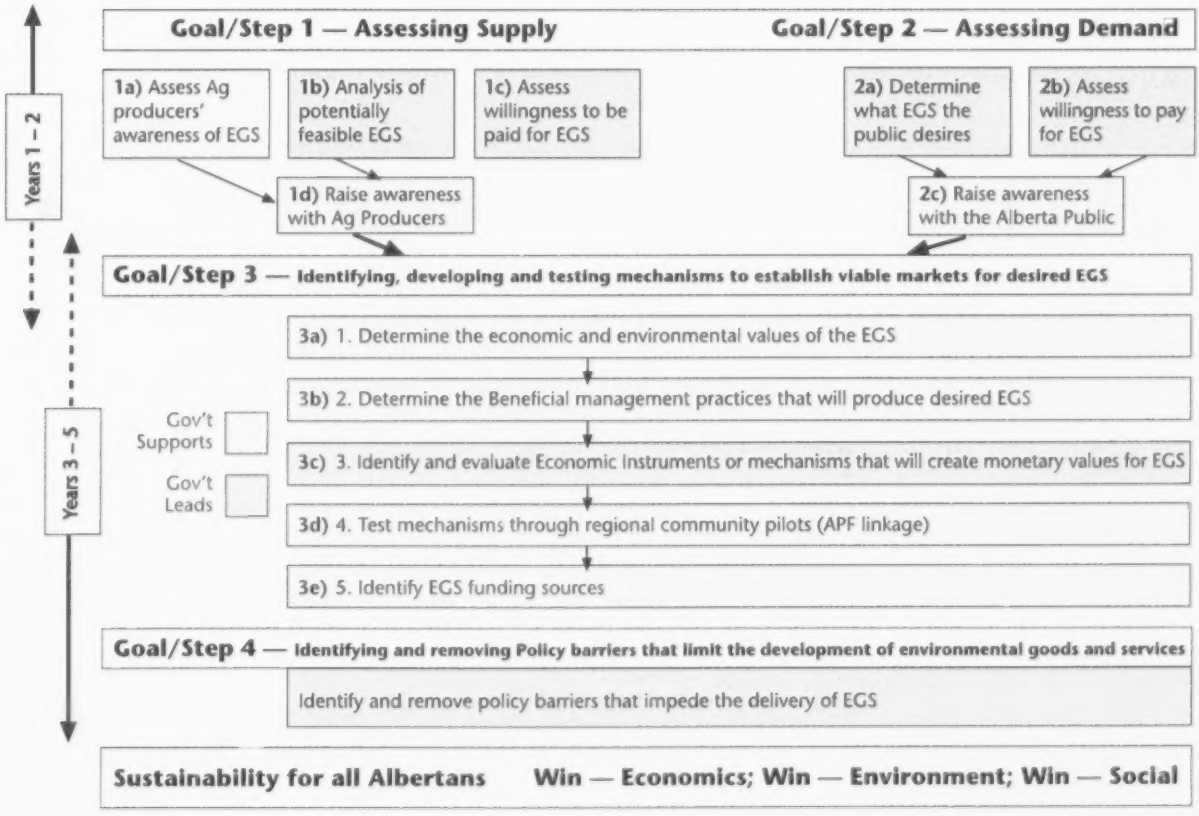

Goal/Step 1 — Assessing Supply
Goal/Step 2 — Assessing Demand
1a) Assess Ag producers' awareness of EGS
1b) Analysis of potentially feasible EGS
1c) Assess willingness to be paid for EGS
2a) Determine what EGS the public desires
2b) Assess willingness to pay for EGS
1d) Raise awareness with Ag Producers
2c) Raise awareness with the Alberta Public
Years 1 – 2
Goal/Step 3 — Identifying, developing and testing mechanisms to establish viable markets for desired EGS
3a) 1. Determine the economic and environmental values of the EGS
3b) 2. Determine the Beneficial management practices that will produce desired EGS
3c) 3. Identify and evaluate Economic Instruments or mechanisms that will create monetary values for EGS
3d) 4. Test mechanisms through regional community pilots (APF linkage)
3e) 5. Identify EGS funding sources
Gov't Supports
Gov't Leads
Years 3 – 5
Goal/Step 4 — Identifying and removing Policy barriers that limit the development of environmental goods and services
Identify and remove policy barriers that impede the delivery of EGS
Sustainability for all Albertans
Win — Economics; Win — Environment; Win — Social

Table 4a — Tasks that fulfill ESAT Goal 1

Goal 1: Land managers understand the present and potential benefits and financial opportunities from producing environmental goods and services		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
1a.	**Government will support increasing awareness of EGS by producers**	To be determined in the Preliminary Feasibility Assessment
1b.	**Government will lead the inventory of potential EGS for Alberta**	
1c.	**Government will lead the process to understand the willingness of land managers to accept payment for production of EGS.**	
1d.	**Government will support the process to package and communicate EGS information to land managers.**	
1e.	**Government recommends that industry take the lead on gaining political acceptance of the concept.**	

Table 4b — Tasks that fulfill ESAT Goal 2

Goal 2: Society accepts that managers of agricultural landscapes and viable rural communities help to achieve everyone's environmental goals		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
2a.	**Government will lead a strategy to identify the EGS that will potentially be in demand by the public**	To be determined in the Preliminary Feasibility Assessment
2b.	**Government will lead a strategy to determine the cost effectiveness of the potential reallocation of resources to support public interest in EGS.**	
2c.	**Government will support packaging and communication of EGS information to the public**	

Table 4c — Tasks that fulfill ESAT Goal 3

Goal 3: Environmental Goods and Services provided by managers of agricultural landscapes have value through market-based solutions, incentives and other economic instruments		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
3a.	**Government will support a strategy to conduct a market analysis of the environmental values of EGS.**	To be determined in the Preliminary Feasibility Assessment
3b.	**Government will support a strategy to determine the best management practices that will produce desirable EGS.**	
3c.	**Government will lead a process to identify market-based solutions, incentives and other economics instruments, as well as indicators to measure environmental benefits.**	
3d.	**Government will support community-based pilots to test economic instruments.**	
3e.	**Government will support a strategy to identify EGS funding sources.**	

Table 4d — Tasks that fulfill ESAT Goal 4

Goal 4: Policy barriers that limit the development of environmental goods and services are identified and removed		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
4.	**Government will lead a process to identify policy barriers that prevent the delivery of EGS.**	To be determined in the Preliminary Feasibility Assessment

Table 4a — Tasks that fulfill ESAT Goal 1

Goal 1: Land managers understand the present and potential benefits and financial opportunities from producing environmental goods and services		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
1a.	**Government will support increasing awareness of EGS by producers**	To be determined in the Preliminary Feasibility Assessment
1b.	**Government will lead the inventory of potential EGS for Alberta**	
1c.	**Government will lead the process to understand the willingness of land managers to accept payment for production of EGS.**	
1d.	**Government will support the process to package and communicate EGS information to land managers.**	
1e.	**Government recommends that industry take the lead on gaining political acceptance of the concept.**	

Table 4b — Tasks that fulfill ESAT Goal 2

Goal 2: Society accepts that managers of agricultural landscapes and viable rural communities help to achieve everyone's environmental goals		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
2a.	**Government will lead a strategy to identify the EGS that will potentially be in demand by the public**	To be determined in the Preliminary Feasibility Assessment
2b.	**Government will lead a strategy to determine the cost effectiveness of the potential reallocation of resources to support public interest in EGS.**	
2c.	**Government will support packaging and communication of EGS information to the public**	

Table 4c — Tasks that fulfill ESAT Goal 3

Goal 3: Environmental Goods and Services provided by managers of agricultural landscapes have value through market-based solutions, incentives and other economic instruments		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
3a.	**Government will support a strategy to conduct a market analysis of the environmental values of EGS.**	To be determined in the Preliminary Feasibility Assessment
3b.	**Government will support a strategy to determine the best management practices that will produce desirable EGS.**	
3c.	**Government will lead a process to identify market-based solutions, incentives and other economics instruments, as well as indicators to measure environmental benefits.**	
3d.	**Government will support community-based pilots to test economic instruments.**	
3e.	**Government will support a strategy to identify EGS funding sources.**	

Table 4d — Tasks that fulfill ESAT Goal 4

Goal 4: Policy barriers that limit the development of environmental goods and services are identified and removed		
	Associated Tasks expressed in Figure 1	**Estimated Cost**
4.	**Government will lead a process to identify policy barriers that prevent the delivery of EGS.**	To be determined in the Preliminary Feasibility Assessment

Appendix — Examples of Existing Market Based Mechanisms for Environmental Goods and Services

Market Based Mechanisms	Incentive	Country	Competitive Advantage/Main Objective	Canadian Currency*
Fees, Charges or Taxes	Climate Change Levy	UK	Promote energy efficiency, encourage employment and investment in new technologies	$2.5 billion
Fees, Charges or Taxes	Agriculture Management Account: Iowa Groundwater Protection Act	US	Reduce the need for fertilizer and pesticide applications to protect/ improve groundwater	$4.5 – $5.67 million
Marketable Permits: Cap and Trade	UK Emissions Trading Scheme	UK	Greenhouse gas emissions reductions	$537.5 million
Private Financial Assistance	Adopt-A-Pothole	CAN	Improved nesting areas for waterfowl	$100/acre
Voluntary Actions/ Information Disclosure	Swedish Seal of Quality	SWE	Guaranteed product is produced in an environmentally friendly manner	Market Premium
Liability	Renewables Obligation Order 2002	UK	Customers are supplied with energy from renewable sources	$650 million
Financial Incentives	Natural Heritage Trust (NHT)	AUS	Increased biodiversity, sustainable use and management of Australia's natural resources	$880 million
Financial Incentives	Landcare	NZ	Practices that contribute to reversing land degradation and promoting sustainable agriculture	Component of NHT.
Financial Incentives	Rivercare	AUS	Improved water quality and environmental conditions in river systems and wetlands	Component of NHT.
Financial Incentives	Energy Crops Scheme	UK	Encourage the development of energy crops, which will contribute to both the EU commitments on the reduction of greenhouse gases and the Renewable Obligation.	$2,300, with total cost of: $72.5 million
Financial Incentives	Woodland Grants Scheme	UK	Encourages the creation of new woodlands to increase wood production, improve the landscape, provide new habitat for wildlife and offer new recreational opportunities.	$1,500/ha – $3,375/ha
Financial Incentives	Environnemental Quality Incentives Program	US	More efficient irrigation systems, better nutrient management of crops and livestock, increased alleviation of soil erosion and land protection.	$324 million
Financial Incentives	Conservation Reserve Program	US	Improved soil, water and wildlife resources	Up to $81,000/ person/year
Financial Incentives	Farmland Protection Program	US	Conservation of highly erodible land	$56.7 million

Animal Welfare

Through the Ag Summit process, the Image & Importance of Agriculture Action Team (IIAAT) raised the issue that livestock welfare is a concern of consumers. Consumers are increasingly associating the quality of farm animal welfare with food quality and safety, which in turn affects their purchasing decisions. For example, fast-food retailer Burger King now requires its suppliers to meet their standards for humane animal treatment. IIAAT team members were also concerned that animal welfare concerns could affect international trade.

The Alberta Government and Alberta's livestock industry recognize that livestock welfare is an increasingly important issue and a key component in the sustainability of the livestock industry here. As highlighted by the IIAAT members, the provincial and federal governments along with industry must continue to work proactively to ensure that farm animals are raised humanely.

Ag Summit Recommendations

Recommendations developed through the Ag Summit process focused on industry responsibility and leadership and communications with stakeholders. The following recommendations were presented.

- The Image & Importance of Agriculture Action Team believes that an industry driven process will be more successful than legislated action with respect to livestock welfare and therefore supports the work of Alberta Farm Animal Care Association.
- The Image & Importance of Agriculture Action Team supports the Alberta Farm Animal Care Association and Growing Alberta working together to promote the successes of Alberta's livestock industry in the area of improving livestock welfare.

Yesterday's and Today's Actions

Alberta has an effective livestock protection system. It includes education, cooperative commitments and enforcement. In direct response to growing public and producer concern for an affective, accountable and coordinated province-wide program targeting animal care, the Alberta Livestock Protection System was created.

Industry Leadership

The Alberta Livestock Protection System (ALPS) has the mandate of responsible and humane care of livestock in Alberta. By fulfilling its mandate, ALPS provides a positive approach to meeting the needs of farm animals and the expectations of producers and the public. This innovative initiative is a partnership of Alberta Agriculture, Food and Rural Development (AAFRD) and the following organizations.

- The Alberta Farm Animal Care Association (AFAC), which is a livestock industry based organization providing industry awareness for livestock welfare through a separate agreement with AAFRD. The Alberta Government provides approximately $80,000 annually to AFAC to provide these services.
- The Alberta Society of the Prevention of the Cruelty to Animals (Alberta SPCA), which is responsible for enforcing the Animal Protection Act in rural Alberta. The Alberta SPCA delivers these animal protection services through a three-year agreement with AAFRD, which provides $731,000 annually to the Alberta SPCA.

On March 27, 2002 The Alberta-Canada Livestock Welfare Research Partnership (ACLWRP) was formed to support livestock welfare research in Alberta. Based at the Lacombe Research Centre, ACLWRP is a $1.5 million partnership between the federal and Alberta governments and Alberta's livestock industry. The partnership focuses on four research areas: husbandry practices, early detection of disease, non-invasive procedures, and the environment in which livestock live. In its first year, the partnership attracted over $1.4 million of additional research dollars to undertake a number of projects including group sow housing, bison dehorning, livestock transport, spent hen euthanasia, and early detection of disease through thermography. The partnership is working with other research institutions involved with livestock welfare research in Alberta and Canada and around the world.

The Alberta Livestock Industry Development Fund (ALIDF) is an $11 million fund established by the Alberta Government to strengthen the competitiveness of Alberta's livestock industry. ALIDF funds projects that help Alberta livestock producers provide safe, high-quality products while at the same time supporting a strong, responsible livestock industry for the future. The fund is managed through a board representing Alberta's livestock industries. The priorities of ALIDF fund are: environmental sustainability, food safety and quality assurance, animal welfare, and market and value-added development. The ALIDF has provided funding for research projects through the ACLWRP and has provided AFAC's funding for its farm animal care communication program.

Communications With Stakeholders

The Alberta Government supports Growing Alberta as a communication organization designed to dialogue with Albertans about the benefits of our agriculture and food industry. Consumers increasingly want to know how their food is being produced to ensure quality, nutrition and safety. Through a wide range of communication tools, Growing Alberta profiles stories about the real people who are working hard to provide safe, humanely produced, quality food with a careful eye on the environment. Growing Alberta is funded by investment from industry, Alberta Agriculture, Food and Rural Development and the federal Canadian Adaptation and Rural Development Fund, which is administered by the Agriculture & Food Council in Alberta. Growing Alberta has effectively partnered with the Alberta Farm Animal Care Association to communicate to the general public the agriculture industry's commitment to animal care and welfare.

Legislation

Alberta's animal welfare legislation, the *Animal Protection Act* (APA), is the most stringent and progressive provincial legislation in Canada. Working in conjunction with the legislation, Alberta has created effective pro-active and coordinated partnerships with various provincial departments, agencies, private sector services and the federal government.

Alberta's APA is the responsibility of the Minister of Agriculture, Food and Rural Development (AAFRD). Under the APA it is illegal to cause or permit an animal in one's care to be or continue to be in distress. In addition, in cases of extreme cruelty, offenders can be prosecuted under the federal Criminal Code. The APA and other provincial statutes pertaining to animal welfare, in conjunction with enforcement agencies, provide an effective and efficient means of protecting animals, and if necessary, penalizing animal abusers.

Tomorrow's Actions

The Alberta Government will continue to support the efforts of the Alberta Farm Animal Care Association (AFAC) to promote responsible animal care and enhancing public understanding of Alberta's animal agriculture industry. The government's current direct financial commitment to AFAC and support of efforts through partnerships in with the Alberta Livestock Protection System and the Alberta-Canada Livestock Welfare Research Partnership are seen as important to the sustainable growth of Alberta's livestock industry. The provincial government also supports the priorities of the Alberta Livestock Industry Development Fund (ALIDF), which addresses animal welfare needs and will continue to encourage ALIDF to support initiatives relating to livestock welfare research, communication and extension.

The Alberta government will continue to work with AFAC and Growing Alberta to provide factual information to producers and consumers about animal welfare.

Government Response to Agrivantage Recommendations

Agrivantage was the industry-government leadership team that coordinated actions and guided the Action Teams involved in Ag Summit. This leadership team produced a report as part of its mandate that was a summary and wrap-up document for the Ag Summit process. The Agrivantage report provided industry and government with observations and recommendation relating to several overarching issues. They are as follows:

- An analysis of the human resource, management and leadership issues the industry will face in its efforts to achieve Summit goals.
- An examination of the relationship between agricultural and rural policy and the impacts on and implications for rural Alberta of an agricultural policy focused on growth.
- The need for "breakthrough" strategies to enable the industry to reach the Summit growth goal of $20 billion in value-added activity by 2010.

New and emerging trends and issues having a significant impact on the industry that were identified by Agrivantage include:

- implications of the federal-provincial-territorial Agricultural Policy Framework
- integration and coordination of research and development capacity and resources supporting the agri-food industry in Alberta and nationwide.

Agrivantage Recommendations

Agrivantage made ten recommendations that speak to the future of the agri-food industry. Their recommendations chart some immediate actions as well as some long term directions for government and industry to consider. The provincial government's response to the recommendations has been favorable as shown by the action listed below. The ten Agrivantage recommendations are listed in the same order that they were presented in the report. The government response is provided for each one including past, current and future actions. The Agriculture and Food Council (AFC) represented the agri-food industry throughout the Ag Summit process. AFC is now following up with industry on the Agrivantage report. The industry wide consultation/response process led by AFC is scheduled to begin in the fall of 2003 and finish by the end of the year. Industry support for the report's recommendations and the degree of industry commitment to implement them will be gauged in the process.

Responses

The provincial government has embarked on many proactive initiatives that move the industry in the same direction as that suggested in Agrivantage's recommendations. The recommendations reinforce these actions. The major government or government-industry initiatives reported in this section represent actions that were taken or had been planned prior to May of 2003.

Recommendation #1

The agri-food industry and government should support the Agricultural Policy Framework (APF) and adopt a general strategy of voluntary compliance with its key elements.

Response

Alberta signed the main framework with the federal government in June of 2002. Alberta also signed the Canada-Alberta Implementation Agreement on June 4, 2003. The Implementation Agreement is a five-year agreement providing funds for business risk management, environment, food safety and quality, renewal and science and innovation. For details on the APF see appendix A of this report.

Recommendation #2

The agri-food industry and government should adopt integrated growth planning as a key process in achieving the industry's $10/20 billion growth goal.

Response

The Industry Development Sector (IDS) of Alberta Agriculture, Food and Rural Development (AAFRD) was reorganized in 2002 to better address the challenges and barriers associated with moving the agri-food industry toward growth opportunities.

Subsequently, IDS has prepared a draft for "Alberta's Agri-Food Growth Strategy" (Growth Strategy) in consultation with the agri-food industry. It is attached in its entirety in appendix A of this response report.

The Growth Strategy is built on pursuing opportunities across all agri-food sectors. However, five sectors have been identified as having significant growth potential (ie. $1 billion or more of potential growth by 2010). They are beef, pork, processed meat/ready meals, ag/industrial products and functional foods/natural health products. As well, the Growth Strategy has identified barriers that will have to be resolved for growth to occur. This strategy has been developed in coordination with other strategic initiatives such as "Securing Tomorrow's Prosperity" (Alberta's draft value-added strategy) and the Alberta Agricultural Research and Innovation Strategic Framework (ARIF) details of which appear elsewhere in this response report. Efforts in each of these have been aligned to help move the agri-food industry towards the opportunity of achieving $20 billion in value added and $10 billion primary production opportunity by 2010.

Industry has been consulted throughout the creation of the Growth Strategy. Consultations are ongoing, from the perspective of both the Growth Strategy in general and the five key sectors.

Recommendation #3

The agri-food industry and government should place high priority on growth planning activities in new and emerging products, production and processing methods and technologies and market opportunities that hold the greatest potential for growth and innovation of breakthrough proportions.

Response

Alberta Economic Development in conjunction with the federal government recently released Alberta's International Marketing Strategy 2003: Targeting Tomorrow (AIMS 2003). It lists 12 key value-added sectors that have been identified as having the greatest potential for growth internationally up to the year 2010. The agri-food industry is part of that list. The strategy also identifies target markets, activities and goals for each of those sectors.

The draft "Alberta's Agri-Food Growth Strategy" places a high emphasis on new and emerging products and their accompanying processing methods and technologies. For example, the Processed Meats/Ready Meals section of the Growth Strategy includes meat snacks, sausages, cooked meats, portion cuts and case ready meats. The Ag-Industrial Products section of the strategy includes bio-based renewable resources (agricultural products) in the manufacture of basic chemicals, intermediates and end products in the non-food sector (eg. ethanol, bio-diesel, bio-lubricants, cosmetics, essential oils, and bio-medical products).

Functional Foods and natural health products are foods (or constituents thereof) that provide health benefits and/or reduce the risk of chronic disease beyond the nutrition functions of normal foods. These products are gaining acceptance with an aging population as alternative forms of medicine. The draft Growth Strategy has a section outlining how these products could be another area for considerable expansion in Alberta.

The recently announced Business Incubator and relocation of the Centre for Agri-Industrial Technology, both of which will be built next to the Food Processing Development Centre at Leduc, will all help to develop and commercialize new and innovative food and non-food products.

AAFRD, the University of Alberta, and the Alberta Research Council signed a Memorandum of Understanding (MOU) earlier this year. The intent of the MOU and subsequent binding agreements is to define how these parties will work together for the collaborative management and delivery of agriculture, agri-food and agri-industrial programs through the creation of the Institute for Food, Agri-Industrial and Agricultural Sciences, Alberta (IFAASA). The objectives of the agreement are to make IFAASA:

1. an internationally recognized center for basic and applied research;
2. a center for the commercialization of products, processes and technologies; and
3. a center of learning.

The institute expects to train over 300 graduate students and technicians and to develop 125 new products and 70 new companies. Four "domains" have been identified in the agreement where research and development efforts will be focused. They are:

- Sustainable Cropping Systems
- Sustainable Livestock Systems
- Bio-products, and
- Value-Added Food and Health Products

The Sustainable Cropping Domain will be the first area of development. It's expected that the initiative will result in new and improved cultivars that will create new markets for human, animal feed and industrial markets.

As part of the IDS reorganization in 2002, the Ag-Entrepreneurship Division was created. This division identifies and channels resources to jump-start emerging ventures and assists growth and development of agri-entrepreneurial enterprises. The Agri-Processing Branch in the Business and Innovation Division, of IDS, works with entrepreneurs to adopt new technology and develop new food, non-food and agri-industrial products.

New agricultural non-food products called Environmental Goods and Services (EGS) are another growth opportunity that is gaining momentum across industry and governments. In March 2003, the Alberta Environmentally Sustainable Agriculture Council, in conjunction with AAFRD, held an information and awareness workshop on EGS called "Who's Rewarding Stewardship"? In addition, AESA Council, with AAFRD support, has been leading a risk assessment to implementing an EGS program in Alberta. AAFRD has also conducted a competitiveness scan of EGS programs around the world.

AAFRD is assisting interested industry producer boards and commissions with organizing visioning/strategy sessions for their industry.

Recommendation # 4

The agri-food industry and government should commit to and support the further development of collaborative networks and leadership panels, drawing from within and outside the industry.

Response

The release of *An Integrated Life Sciences Strategy for Alberta* (an umbrella strategy that encompasses agriculture and food, health, environment, energy and industrial products) and Alberta's Agriculture Research and Innovation Strategic Framework (a document that outlines Alberta's major research and development and technology transfer areas for the next five-years). These encourage partnerships and networks that contribute to the development of world-class technology for industry. An example follows.

AAFRD, in partnership with the University of Alberta, have developed a multi-institutional research network; the Alberta Bioplastics Network (ABN). It's mandate is to engage in activities to promote the use of Alberta's agricultural commodities as feedstock for the production of specialty chemicals and polymers.

The co-locating in Leduc of the Food Processing Development Centre, the Agrivalue Processing Incubator and the Centre for Agri-Industrial Technology will facilitate collaboration and encourage business partnerships. This co-location also assists Alberta's agri-entrepreneurs to develop management skills and attract investment.

As part of the Functional Foods/Natural Health Products (FF/NHP) Initiative, plans are underway to build an Alberta FF/NHP network, comprised of government, industry and academia.

AAFRD partners with AVAC Ltd. to encourage entrepreneurs in the pursuit of value added agriculture and pre-commercialized new products.

The Ag Summit process has been a demonstration of this Agrivantage recommendation. Industry (as represented by the Ag & Food Council) and the provincial government decided in late 1999 and early 2000 that issues and opportunities

facing the agri-food industry could be examined. Combining forces, they examined and defined the issues, challenges and opportunities with industry-wide consultations. Action Teams (led by industry people and supported by government staff) and Agrivantage (comprised of government and industry leaders) took part. In this response process, government and industry are collaborating again to assure that efforts are integrated.

Recommendation #5

The agri-food industry, government and other stakeholders should collaborate in the development of an Integrated Human Resource, Management and Leadership Development Strategy.

Response

For the agri-food industry to grow and prosper, this Agrivantage recommendation identifies the need for a strong management and leadership development strategy. The provincial government shares this concern. Consequently, AAFRD and the Agriculture and Food Council will be partnering to increase opportunities for agriculture/agribusiness leaders to access enhanced learning options. This study will be completed in conjunction with other programs and initiatives planned through the Agriculture Policy Framework — Renewal Chapter (summarized in appendix A of this report).

AAFRD provides ongoing management development programs in conjunction with other private or public sector organization. An example is the Competitive Program for Agriculture that the Business Management Innovations Branch delivers in conjunction with Olds College. The federal-provincial Agricultural Policy Framework, Renewal Chapter (summarized in appendix A of this report) provides several opportunities for producers to upgrade their managerial skills. These will be developed and refined as the details are implemented over the next five years.

AAFRD has ongoing leadership development programs that it operates or supports. Examples are the 4-H program that helps to develop young leaders in rural Alberta. AAFRD has contributed re-investment funds to the 4-H Foundation to create a scholarship program aimed at supporting high-level manpower training. The department also provides financial support to organizations such as REDA (The Rural Education and Development Association) and local Agriculture Societies. AAFRD has staff members that are involved in the Innovation in Agribuiness Management Fund (IAMF) that is being offered through the Agriculture and Food Council (AFC). A part of that fund is being applied to coaching and mentorship programs to develop management and leadership throughout the agri-food industry.

Agrivantage identified the need for the provinces agri food industry to attract and develop qualified researchers as a crucial leadership issue. The new provincial Life Sciences Strategy and the Agricultural Research and Innovation Strategic Framework discussed in the Research and Development section starting on page 29, is in part, expected to address this need.

The Agrivantage report also mentions needs for a "Recruitment and Retention Plan" and a "Training and Development Plan." These needs have also been recognized by the provincial government. For details on the government response to these issues, please see Human Resource Response Report, starting on page 61 of this document.

Recommendation #6

All government, agri-food industry and other stakeholders should continue and strengthen efforts to improve the efficiency, accountability, coordination and capacity of research and development and technology commercialization that supports the industry.

Response

Alberta's Agriculture Research and Innovation Strategic Framework (ARIF), which is attached as appendix C sets out the goals, outcomes, direction, leadership and governance, opportunities etc. for the agri-food industry.

The guiding principles of the ARIF are:

- building a critical mass of world-class scientific personnel in disciplines critical to Alberta's unique needs
- supporting it with appropriate levels of research program funding
- utilizing talents as the engine for innovation
- ensuring discoveries are supported with knowledge transfer, technology commercialization expertise and industry partnerships
- building research excellence with a collaborative spirit, global networks, and links with entrepreneurial skills are the essential ingredients for success.

The ARIF covers the continuum from basic research, applied research, technology transfer, development and finally commercialization to consumer products. It was developed with the cooperation of funding agencies, industry representatives (including people involved in technology transfer and commercialization) and researchers.

An Alberta-Canada Livestock Welfare Research Partnership (ACLWRP) to support applied animal welfare research for the livestock industry in Alberta was created on March 27, 2002. Initial contributions to the partnership from Agriculture and Ari-Food Canada, Alberta Agriculture, Food and Rural Development and Alberta Farm Animal Care are $1.5 million over three years. The in-kind and cash funding has been allocated toward such areas as research, employing scientists and technicians, providing laboratory equipment and providing operational and extension support. The program is focusing on welfare issues that directly affect farmed animals and in particular, those areas having serious economic consequences. Four research categories have been identified for study under the partnership: improving animal husbandry practices, the early detection of disease and stress, refining invasive procedures as well as modifying, improving or adapting the environment in which the animals live. The key deliverables for the partnership will be the development, through research, of animal welfare knowledge and technology that will ensure that the province of Alberta maintains a leadership role in farm animal welfare.

Recommendation #7

The agri-food industry, government and rural communities should jointly develop a comprehensive rural policy that recognizes that agricultural policy and rural policy are interdependent but with diverging outcomes.

Response:

The government of Alberta has recognized the need to have a policy focus on rural Alberta and has established an initiative to bring forward a Rural Development Strategy to serve as a government-wide policy document to guide future policies, programs and services that impact rural Alberta. Consequently, the Ministers of Agriculture, Food and Rural Development and Alberta Economic Development have jointly untaken to have the Rural Development Initiative imbedded in a priority cross-ministry Economic Development Strategy. This will raise the profile of rural activities and hold Ministries in the government of Alberta accountable for rural friendly policies, programs and services. A Cross Ministry Committee of Assistant Deputy Ministers has been established with representation from 23 ministries of the government of Alberta. This Cross Ministry committee is responsible for coordinating business planning activities and seeking out opportunities to increase "rural friendly" policies, programs and services, which will be embedded in their respective business plans for 2004/05 and beyond.

There are a number of government activities planned that develop comprehensive rural policy that recognizes that agricultural policy and rural policy are interdependent but with diverging outcomes. These include:

- compiling strategies and actions contained in business plans that will increase the emphasis and focus on rural Alberta. These will be embedded into the Rural Development Strategy planned for spring 2004
- developing specific targets for the Priority Cross Ministry Initiative which will be written into the Initiative by January 2004
- building a mechanism to assist the community and the agri-food industry to become engaged in the delivery of the targeted programs and services will be developed within the next year.

Recommendation #8

The agri-food industry, government and all Albertans should recognize the need for and commit to long-term investments that sustain a shared vision for the rural environment, economy, culture and quality of life.

Response

Cabinet approved a vision for rural Alberta in May of 2003. This vision serves as an anchor document for future policy decisions and program developments. An MLA Steering Committee was established in July of 2002 and has had two rounds of consultations with Albertans including community groups, citizens, stakeholders and formal organizations and boards. This MLA Steering committee is preparing a report, with recommendations for the Minister of Agriculture, Food and Rural Development, outlining program and policies options that will address health, learning, economic development, including investments and issues relating to ensuring that the environment, culture and quality of life of rural Alberta is maintained.

Future government activities in relation to this recommendation are as follows:

- The Minister and Cabinet will review the recommendations of the MLA Steering Committee. Based upon their assessment and response, several policy changes and program adjustments can be anticipated.
- It is anticipated that active steps will be taken to increase the profile and voice of rural Alberta.
- The developments within the National Rural Policy Framework discussion will also have an influence on the profile and policies of rural Alberta. Targeted research is planned, and a formal Policy Framework is anticipated for 2004 – 2005.
- Mechanisms to encourage greater citizen and industry engagement and investment will be pursued by several Alberta government ministries.

Recommendation #9

Government should configure its priorities and activities to support agri-food industry development and collaborate with the industry in program and service delivery and on policy development.

Response:

Supporting the development the agri-food industry continues to be an objective of the province. There are several government departments working cooperatively together and with industry to support development.

The 2003-2006 business plans for Agriculture Food and Rural Development, Economic Development, Innovation and Science, Transportation, Human Resource Development, and International and Intergovernmental Relations include a number of goals that directly support the growth of the agri-food industry and respond to the recommendations brought forward through the Ag Summit process. The agri-food industry and AAFRD will be engaged in the activities associated with the various departmental goals and core businesses outlined in the table below. For more details on the various departmental business plans refer to **www.finance.gov.ab.ca/publications/measuring/minbus.html**

Provincial Government Department Business Plans — Exerpts

Department	2003-06 Business Plan Goals and Core Businesses
Agriculture, Food & Rural Development	**Core Business 1**: Facilitate Industry Growth **Goal 1**: Growth of the Agriculture and Food Industry This goal recognizes that long-term growth is the result of gaining a competitive advantage for certain market opportunities. AAFRD contributes by aiding new product development market access, and business services. **Goal 2**: Continued Excellence in Food Safety Food safety is essential to maintain and expand markets domestically and abroad. AAFRD contributes to this goal by promoting/ensuring food safety production and processing practices throughout the supply chain.
	Core Business 2: Enhance Rural Sustainability **Goal 1**: Improved environmental stewardship This goal recognizes the responsibility of AAFRD to support the agri-food industry to maintain or improve Alberta's air, water and soil for current and future generations. AAFRD contributes through a variety of services such as policy, legislation, and information regarding conservation, management, climate change and biodiversity.
	Core Business 3: Provide Safety Nets **Goal 1**: Effective Safety Net Programming This goal recognizes the need for more financial stability in the production sector that is affected by weather and other global influences. Thus, AAFRD provides risk management tools that are not consistently available through the private sector.
Economic Development	**Goal 1**: Sustainable Economic Growth and Diversification in Alberta The thrust of this goal is to facilitate economic growth and diversification via the Economic Development Strategy and other channels, providing client-driven economic information and engaging communities in regional economic development
	Goal 2: Alberta's Organizations are Globally Competitive This goal is aimed at increasing exports of Alberta's value-added goods and services and increasing the competitiveness of our value-added sector.
	Goal 3: Alberta is Viewed by those in our Primary Markets as an attractive Place to live, visit and do business This goal seeks (in part) to increase Alberta as a preferred location for new and expanded investment.
Human Resources & Employment	**Goal 2**: Albertans have the Skills and Supports they need to succeed in the Labour Market This goal is aimed (in part) at providing programs and services to help Albertans manage their careers in a changing labour market.
	Goal 3: Albertans have quality workplace, career and labour market information. This goal seeks to provide Albertans with career and labour market information and to share information about skills that will be required in the workplace.
	Goal 5: Alberta has a productive workforce that meets the needs of the economy today and in the future. The desired result of this goal is that employers have access to the skilled workforce they need.
Innovation & Science	**Goal 4**: To foster excellence in life sciences research that contributes to Alberta's continued prosperity. This goal seeks to start the implementation of a long-term Life Sciences Strategy which includes a skilled workforce to support life sciences research for a more technologically advanced agriculture and food industry.
International & Intergovernmental Relations	**Goal 2**: Promoting the interests of, and securing benefits for, Alberta from strengthened international relations. This goal seeks to influence intergovernmental relations that aid the two-way goods, services, people and investment between Alberta, the USA and other foreign countries.
	Goal 3: Promoting the interests of, and securing benefits for, Alberta from greater trade and investment liberalization, domestically and internationally. This goal strives for expanded trade liberalization within Canada and internationally to allow for greater access of Alberta products to external markets.

Transportation	**Core Business 2**: Manage the Provincial Highway Network This seeks to continually improve transportation planning and protect the integrity of highway infrastructure.
	Core Business 3: Support Economic Development This helps municipalities with funding for transportation and water/wastewater projects. It also helps with the development of major trade routes to improve access to global markets.
	Core Business 4: Represent Alberta interests in Transportation Policy This includes research into and development of intelligent transportation systems, participating in cross-ministry initiatives that impact transportation and pursue national programs that will improve access to inter-modal transportation.

Recommendation #10

Agri-food industry organizations should review their mandates and operating plans to improve integration, eliminate overlap and duplication and better enable partnerships with government in program and service delivery and on policy development.

Response

Government is working with industry to help form groups that address issues on a sector-wide basis rather than a commodity basis. An example is the Intensive Livestock Working Group (ILWG). It is an alliance of Alberta livestock organizations including Alberta Beef Producers, Alberta Cattle Feeders, Alberta Chicken Producers, Alberta Egg Producers, Alberta Hatching Egg Producers, Alberta Milk, Alberta Pork and Alberta Turkey Producers. The purpose of the ILWG is to serve as a forum for sharing information, coordinating and developing positions and messages to deal with common issues facing Alberta livestock producers.

Another example of industry coordination is the Agricultural Funding Consortium. It is a collaboration of six agricultural research funding organizations including the Alberta Agricultural Research Institute (AARI), Alberta Crop Industry Development Fund (ACIDF), Diversified Livestock Fund of Alberta (DLFA), Alberta Livestock Industry Development Fund (ADLIF), AVAC Ltd., and Alberta's portion of the federal Canada Adaptation and Rural Development Fund (CARD Fund) administered by the Agriculture and Food Council. The funding consortium offers a one-window service to funding applicants and ensures they get the broadest possible exposure to organizations likely to supply them with financial assistance for their projects. The consortium also helps to assure that all areas of the research and development continuum are addressed by funding initiatives that are likely to produce the most beneficial results in relation to the priority areas identified in Alberta's Agriculture Research and Innovation Strategic Framework (ARIF). The priority areas in the ARIF are "in line" with the Key Sectors identified in the draft Growth Strategy so there is agreement in the various government-industry endeavours.

Conclusion

Clear Directions

Ag Summit was born out a recognition that the agriculture industry in Alberta is at a crossroads. Producers and processors face a global marketplace characterized by high levels of competition, shrinking commodity margins and changing market demands. To sustain its international viability, its role in Alberta's economy, and the vitality of rural Alberta, the agri-food industry needs to change its focus. It must move from low-cost, mass-produced, undifferentiated products to specialized value-added products driven by market knowledge, quality and speed.

A belief that people involved in the industry were the best source of knowledge and ideas to meet this challenge guided the Summit. Stakeholders from a cross-section of industry sectors and communities came together to identify opportunities, set priorities, recommend strategic actions and clarify the direction government and industry should take. The process stimulated "out-of-the-box" thinking. Participants clearly recognized the need for a broad perspective that went beyond the traditional concerns of the agri-food community. This, in turn, compelled a comprehensive response on the part of government, leading to increased understanding of roles and greater cooperation between industry and government and among government ministries.

The Ag Summit also demonstrated that producers, processors and agri-food entrepreneurs supported the development of a new strategy to grow Alberta's agri-food industry. As a result, the government was able to make crucial decisions on some major initiatives that support industry efforts to increase primary and value-added production, and to act as soon as the Ag Summit 2000 findings were released.

The leadership of the Agriculture and Food Council, which represented industry, was a highlight of the process. It enhanced ongoing consultation and cooperation and ensured development of an appropriate and sound government response. That leadership will continue to be critical as new programs and policies are implemented over the next few years.

A Foundation for Progress

Several major new government initiatives directly or indirectly respond to the Ag Summit process. The initiatives address specific Action Team recommendations in each of four primary themes — expanding strategic alliances, addressing challenges to growth, enhancing public confidence and growing rural communities — as well as the broader Agrivantage recommendations.

The government's actions recognize the many critical challenges facing the industry. A comprehensive human resources strategy is being developed to meet the needs of the agri-food industry. AVAC Ltd. and Alberta Agriculture, Food and Rural Development are working on new programs to help attract capital and investment and provide coaching and mentoring to entrepreneurs. The government continues to press for changes to the *Canadian Wheat Board Act* and regulations to give producers more choice in where they market their grains. And the provincial Capital Plan provides funding for roads and water management across the province.

Much activity focuses on the critical components of a value-added industry: enhanced research, stronger networks and value chains and improved integration across the industry and with other sectors of Alberta's economy. Some initiatives also have a broader impact, especially in the areas of rural development and environmental stewardship.

Many of the initiatives create the cornerstones for "gearing-up" the agri-food industry for the new millennium. They provide a foundation for future action, particularly in the areas of research, business development and rural development. These cornerstone initiatives do not just respond to one Agrivantage or Action Team recommendation, but address several recommendations. These initiatives include:

- ***Alberta Agriculture Research and Innovation Strategic Framework (ARIF)***

  The ARIF, developed under the province's Life Sciences Strategy, provides governance and strategic guidelines for basic and applied research and the development of consumer products and technologies in specific growth areas of the agri-food industry. The goal is to build research excellence in Alberta that is globally connected, promotes entrepreneurial skills and is well funded. The ARIF will help expand strategic alliances by promoting a research-to-product continuum and building successful partnerships.

- ***Agricultural Policy Framework (APF)***

  The APF and the subsequent Canada-Alberta Implementation Agreement provide the framework and detailed plans for the federal and provincial governments to work with the agriculture and agri-food industry. It includes strategies to make Canada the world leader in food safety, innovation and environmentally responsible production. The APF also aids producers directly, by supporting their efforts to improve their business skills or diversify their enterprises and the development of enhanced business risk management tools. The Implementation Agreement is in place to March 31, 2008. The APF addresses many of the Agrivantage and Action Team recommendations on human resource development, food safety, sustainability, research and financial stability.

- ***Industry Development Sector (IDS) Restructuring and the Growth Strategy***

  The 2001/02 restructuring of the IDS of Alberta Agriculture, Food and Rural Development created two new divisions to support expansion of strategic alliances in the agri-food industry. The divisions, Business and Innovation and Agri-Entrepreneurship, work with industry, academia, government departments and agencies and non-government organizations to help new and existing agri-food companies expand their business activities and to support the development and marketing of new technologies and products.

  The IDS has also coordinated development of a draft Growth Strategy for Alberta's Agri-Food Industry (appendix B) in conjunction with the draft value-added strategy, Securing Tomorrow's Prosperity — Sustaining the Alberta Advantage. The Growth Strategy gives direction and focus to efforts to grow value-added agri-food production to $20

billion by 2010. It identifies five key industry sectors with significant opportunities for growth.

These initiatives respond to the recommendations from Agrivantage and the Action Teams that call for development of an industry growth plan, identification and strategic development of new and emerging products and technologies, development of a human resource strategy, enhancement of agricultural entrepreneurs' business management skills, development of strategic business partnerships and improved access to private investment.

- ***Water for Life: Alberta's Strategy for Sustainability***

  The Government of Alberta's new provincial water strategy, Water for Life: Alberta's Strategy for Sustainability, establishes a framework for water management for all users across the province. It focuses on:

  - Safe, secure drinking water supplies;
  - Healthy aquatic systems;
  - Reliable, quality water supplies for a sustainable economy; and
  - Knowledge to make effective water management decisions.

  The strategy addresses challenges to growth identified in recommendations that called for responsible standards for water and wastewater treatment, investment in water delivery infrastructure and responsible allocation and use of water resources. It will also, in part, address recommendations that call for the wise use of rural landscapes and the development of resource information systems for land use planners and decision makers.

- ***Rural Development Initiative (RDI)***

  Launched in 2002, the RDI is a joint project of Alberta Agriculture, Food and Rural Development, Alberta Economic Development, other agencies and rural Albertans to develop a framework for sustained growth and development of rural areas. The RDI is tied to other cross-ministry initiatives, creating a multi-stakeholder approach to overarching issues. Those initiatives include the Health Sustainability Initiative, the Alberta Children and Youth Initiative, the Economic Development Strategy and the Aboriginal Policy Initiative.

  The RDI responds to recommendations focused on human resource development, sustainability of rural communities, transportation and water services, business development, economic alliances and environmental stewardship.

- ***Institute for Food, Agri-Industrial and Agricultural Science, Alberta (IFAASA)***

  In May 2003, Alberta Agriculture, Food and Rural Development, the University of Alberta and the Alberta Research Council signed a memorandum of understanding to establish IFAASA. The agreement, the first of its kind in Canada, pools resources, staff and facilities valued at over $750 million. The Institute will collaboratively manage and deliver agriculture, agri-food and agri-industrial research, commercialization and education programs. It will reduce duplication of research efforts and lead to formation of several centres of excellence. Research will focus on the discovery of new knowledge and technologies, with commercialization focusing on the application of discoveries.

  IFAASA's training of graduate students and technicians will provide human resource development to help address challenges to growth. It will also strengthen the research-to-commercial products continuum that is critical to developing business partnerships, fostering research and expanding strategic alliances in the industry.

- ***Agrivalue Incubator and Centre for Agri-Industrial Technology (CAIT)***

  The Agrivalue Incubator and CAIT will be built beside the existing Food Processing Development Centre in Leduc. These new entities will help companies transform ideas into commercially viable products. The Incubator will be dedicated to development of new food products, and CAIT will support development of non-food products using agricultural inputs.

  These new entities will expand strategic alliances, addressing Action Team recommendations regarding business partnerships and better use of available financial tools. They also address challenges to growth, by responding to human resource recommendations, and meet Agrivantage recommendations on growth planning activities, collaborative networks and technology commercialization.

- ***Agri-Food Discovery Place***

  This $17 million facility will be built in two phases at the University of Alberta as a joint venture between the University and Alberta Agriculture, Food and Rural Development. The first phase is the Meat Safety and Processing Research Centre, which will house a Level II bio-containment area for research on meat and meat product safety. The second phase is the Crop Utilization Research Centre, which will allow scientists to study and create high value components for non-food, industrial, novel food and functional food applications.

  Agri-Food Discovery Place responds to Action Team recommendations focused on enhancing public confidence in food safety and expanding strategic alliances in research and development. It also addresses Agrivantage recommendations regarding growth planning activities, collaborative networks and technology commercialization.

Accountability for Progress

For the agri-food industry to remain viable in the rapidly changing global market, stakeholders must periodically examine how the industry is performing and whether it is meeting defined goals. An industry self-examination and planning process like the Ag Summit is never complete. The Ag Summit itself built on the work of past consultations, including *Creating Tomorrow* in 1992 and *Getting Down to Business* in 1995. Future government-industry consultation will include opportunities to assess both accomplishments and the success of the Ag Summit process.

More immediate progress measures are available. The Government of Alberta uses three-year business plans to set out planned activities and targets, and details spending plans in the annual provincial budget. Department annual reports released each fall show progress towards targets.

The measures and benchmarks proposed in the Agrivantage report closely parallel those in Alberta Agriculture, Food and Rural Development's business plan. Therefore, the department's annual reports will outline progress in

implementing many of the Ag Summit recommendations. Several other ministries have also included initiatives in their business plans that respond to Ag Summit recommendations, and will report on those in their annual reports.

Future Action

Ag Summit demonstrated that Alberta's agri-food industry recognizes the importance of engaging in more value-added activity, and that has been where the government has focused much of its efforts in the past three years. The industry's long-term prosperity, and that of the Albertans it employs, depends on the ability to respond to opportunities created by changing consumer demands and emerging markets for a variety of food and non-food products.

This report outlines the government's ongoing and planned actions in response to the Ag Summit recommendations. However, many of those recommendations require response from several partners—various levels government, industry and non-government organizations. Ultimate success in building a stronger agri-food industry will depend on continued discussion, partnership and cooperation—the same qualities that created success in the consultation process.

In the final analysis, it will be the commitment and determination of producers, processors and marketers that will move the industry forward. The Government of Alberta therefore looks forward to the results of the industry consultation process launched by the Agriculture and Food Council. Input from that process will allow the government to adjust its plans and programs as needed.

Appendix A — The Agricultural Policy Framework (Summary)

Alberta and the other provincial and territorial governments and the Government of Canada worked with the agri-food industry and interested Canadians to develop the architecture for an agricultural policy for the 21st century. The objective of the policy is for Canada to be the world leader in food safety, innovation and environmentally-responsible production.

To realize this vision, governments have agreed in principle on an action plan for an *Agricultural Policy Framework* (APF) composed of five elements: food safety and food quality, environment, science and innovation, renewal, and business risk management. Each is discussed further in this section. Pages 99 to 106 provide an overview of the goals, targets and measures included in the Federal-Provincial-Territorial Framework Agreement on Agricultural and Agri-Food Policy for the Twenty-First Century.

Each province and territory will enter into an Implementation Agreement with the Federal government to implement the *Agriculture Policy Framework*. The agreements will reflect the needs and realities of each province and territory.

Canada-Alberta Implementation Agreement

On June 4, 2003, the *Canada-Alberta Implementation Agreement* was signed. This agreement spells out many of the concrete measures that both governments will undertake to deliver on their common goals spelled out in the *Agricultural Policy Framework* (APF). The measures will help producers strengthen their businesses, increase prosperity, and meet the demands of consumers at home and abroad, and will ensure that Canadian agriculture continues to be a valuable contributor to the quality of life of all Canadians. This implementation agreement covers the period April 1, 2003 to March 31, 2008. The dollar amounts stated are the commitments by both levels of government over that period of time. It is on the web at: **http://www.agr.gc.ca/cb/apf/index_e.php?section=info&group=impl&page=ab_01**

This section highlights actions being taken under each of the APF's five key elements:

- Food Safety and Food Quality
- The Environment
- Renewal
- Science and Innovation
- Business Risk Management.

The steps that will be taken to help brand the Canadian agri-food sector and promote it around the globe are also described in this section.

Food safety and food quality

Canada's agri-food sector enjoys a global reputation for producing consistently safe, high-quality food. This reputation is due in large part to the commitment of Canadian producers and processors to put rigorous safety and quality-control processes into practice.

However, consumers are demanding greater assurances and more detailed information on the safety and quality of their food, and international competition for food markets is getting tougher. To build on its positive reputation, the Canadian agri-food sector must continue to search out and make the most of new food-safety and food-quality processes, practices, and technologies.

Under the *Agricultural Policy Framework* (APF), governments are committed to ensuring that food produced in this country continues to be among the safest and highest quality in the world. Specifically, Canada and Alberta have agreed to work toward the following common goals on food safety and food quality:

- protecting human health by reducing exposure to hazards
- increasing consumer confidence in the safety and quality of food produced in Canada
- increasing the industry's ability to meet or to exceed market requirements for food safety and food quality
- providing value-added opportunities by adopting food-safety and food-quality systems.

To work toward these goals, the implementation agreement commits Canada and Alberta to delivering a range of programs, services, and tools for producers.

Program highlights

- A food-safety and food-quality program will enhance food-quality and safety systems across Canada through a number of initiatives:
  - On-farm food-safety initiatives will assist the agri-food industry with the adoption of food-safety systems based on the Hazard Analysis Critical Control Point (HACCP) system. HACCP is an internationally recognized system that provides a rigorous, preventative approach to food safety. (Total investment: $5.61 million)
  - An off-farm food-safety initiative will encourage increased participation of national associations and groups involved in the various phases of food production to support HACCP-based activities that enhance food-safety throughout the process. (Total investment: $5.61 million)
  - A traceability initiative will assist industry with developing and implementing a national tracking protocol and product-tracking systems that increase the quality, quantity, and availability of information in support of industry-led food-safety and quality systems. (Total investment: $4.66 million)
  - A food-quality initiative will help the industry implement new quality-control processes for agricultural commodities, as well as food and beverage products. (Total investment: $3.62 million).
- A fostering national approaches initiative will further national food-safety program approaches by supporting a range of activities related to awareness, training, research, and surveillance. (Total investment: $22.83 million)
- Food-safety process control systems for small and medium-sized food processing establishments, transportation, distribution, and storage industries will be supported as

these industries work to implement and audit HACCP-based food-safety systems. (Total investment: $4 million)

- Food safety surveillance programs will be designed to generate baseline data on food-safety hazards and to help develop mitigation strategies. (Total investment: $7 million)
- HACCP implementation in provincially licensed meat and dairy facilities will be supported to help these facilities move from current inspection-based programs to preventative food-safety process control programs. (Total investment: $13.96 million)
- A provincial on-farm food safety program will help various crop and livestock groups develop and implement national or provincial food-safety process control systems. (Total investment: $3.25 million).

The Environment

Year after year, producers depend on the natural environment to deliver the essentials for successful production. Therefore, the long-term prosperity of the sector is inextricably linked with its ability to operate in the natural environment in a sustainable fashion. Governments and producers understand this concept well, and are working together to enhance the agriculture and agri-food sector's ability to better understand the environment and to operate in a responsible manner. Environmentally responsible production means adopting practices that protect air, water, and soil quality, and that promote the conservation of nature.

Under the APF, governments and producers will further their work on environmentally responsible production, and will show Canada and the world that Canadian producers take their role as environmental stewards very seriously.

Canada and Alberta have agreed to the following common goals:

- reducing agricultural risks and providing benefits to the health and supply of water, with key priority areas being nutrients, pathogens, pesticides, and water conservation
- reducing agricultural risks and providing benefits to the health of soils, with key priority areas being soil organic matter and soil erosion caused by water, wind, or tillage
- reducing agricultural risks and providing benefits to the health of the air and the atmosphere, with key priority areas being particulate emissions, odours, and emissions of gases that contribute to global warming
- ensuring compatibility between biodiversity and agriculture, with key priority areas being habitat availability, species at risk, and economic damage to agriculture from wildlife.

To work towards these goals, the implementation agreement commits Canada and Alberta to delivering a range of programs, services, and tools for producers.

Program highlights

- Support will be provided to help producers with the development and implementation of environmental farm plans. These plans will help them increase their understanding of the environment, assess the potential environmental risks and benefits of their operations, and then identify measures to take action on their findings. An incentive program will also be established to help producers more quickly adopt the environmentally beneficial actions needed to reduce the risks and enhance the benefits identified in the plans. (Total investment: $50.3 million)
- Soil, water, air and biodiversity beneficial management practices will be developed to help support the adoption of environmentally sustainable farming practices. (Total investment: $9.05 million)
- Support will be provided for the extension of soil, water, air and biodiversity beneficial management practices. (Total investment: $22 million).

Renewal

Producers are operating in an environment that is increasingly knowledge-intensive. They compete to sell their products in a complex international marketplace, and are required to stay on top of advances in science and technology, business practices, and production techniques. To take advantage of emerging opportunities producers are improving and updating their skills and putting innovative practices and technologies to work.

Governments have agreed to work with producers to ensure they have access to new learning and development opportunities. Under the *Agricultural Policy Framework* (APF), Canada and Alberta have agreed to the following common renewal goals:

- increasing producers' profitability
- enabling them to make choices about sources of income
- helping them meet market and consumer demands concerning food safety, food quality, and environmentally responsible production
- helping them capture opportunities from science and innovation.

To work toward these goals, the implementation agreement commits Canada and Alberta to delivering a range of programs, services, and tools for producers.

Program highlights

- Business advisory services programs will provide producers with access to a network of consultants that will offer business management counseling to help them make business decisions, develop business plans, access capital, expand and diversify their operations to create value-added enterprises, and develop and assess options for the future. (Total investment: $20.73 million)
- A skills development and learning assistance program will offer producers financial assistance to develop their skills and obtain on- or off-farm training, as well as career counseling, that could improve the profitability of the farm and increase family income by generating new business opportunities and employment. (Total investment: $12.95 million)
- A skills development initiative, in support of the skills development program, will identify appropriate skills, develop approaches to deliver agriculture-related skills and learning, and provide advice to governments and educational institutions on the availability of agriculture trainers and consultants. (Total investment: $820,000)
- A business development initiative will evaluate prospects for enhancing existing agriculture industries and to further develop other agriculture-related opportunities and business opportunities unique to rural areas. (Total investment: $14.8 million)

- An initiative to build private-sector capacity will support the development of professionals and agencies that offer information and services to primary producers. (Total investment: $2.75 million)
- Feasibility assessment services will help identify opportunities for new products and new types of agricultural businesses. (Total investment: $2.5 million)
- An initative will help develop strong leaders and managers who will be able to run successful agricultural businesses and take advantage of the new opportunities offered to the industry. (Total investment: $2 million)
- An initiative will develop business risk management information, tools and other materials and opportunities for the beef, crops, pork and emerging industries. (Total investment: $3.754 million)
- Other provincial initiatives will also support the work of advisors under the business advisory services programs and support the development and delivery of tools, information and skills development initiatives to reach farmers and their families. (Total investment: $4 million).

Science and Innovation

Producers in Canada and around the globe have a long history of developing and implementing scientific and technical advances in farming to deliver economic, food-safety, and environmental benefits — and the pace of this activity is continually increasing. The future success of Canada's agri-food sector will depend largely on its ability to be at the forefront of this scientific and innovative activity. Doing so will require close collaboration between researchers, producers, and processors to develop and implement innovations throughout the production chain.

Governments have agreed to take steps to foster scientific and innovative activity in Canada's agri-food sector. Under the APF, Canada and Alberta have agreed to the following common goals:

- realigning public science resources
- co-ordinating along the whole "value chain," which includes all stakeholders
- creating an innovation climate.

To work toward these goals, the implementation agreement commits Canada and Alberta to delivering a number of programs, services, and tools for producers.

Program highlights

- The overarching program for science and innovation will focus on strategic development for science and innovation. This program will include a benchmark study on current levels of investment in science and innovation, a realignment action plan to make adjustments that increase the effectiveness of those investments, and a strategy to increase investment and returns in Canada's bio-based economy. The program will also sponsor pilot projects with industry, the academic community, and research institutions to fill identified knowledge gaps. (Total investment: $4.47 million)
- Innovations for new economic opportunities will facilitate the transfer of research results and innovations into new economic opportunities for producers, processors, and the emerging bio-products sector. (Total investment: $2.845 million).

Business Risk Management

Risk has always been a part of farming. Producers care for crops and herds in the face of numerous risks that both the natural environment and market forces present. Governments have a long history of working with producers to help them deal with these risks, and to stabilize their income. However, today's producers must manage risk in an increasingly complex environment. They face challenges resulting from an evolving business environment, increasing international competition, advances in technology, and more diverse operations.

To help producers succeed in this new environment, governments have agreed to develop improved tools by building on the best features of existing risk-management programs. Under the *Agricultural Policy Framework* (APF), Canada and Alberta have agreed to the following common goals:

- improving the tools available to producers for managing risk
- ensuring that these tools are designed as incentives to increase producers' profitability through growth, diversification, value-added activity, and other means.

To meet these objectives, the implementation agreement commits Canada and Alberta to delivering national programs on business risk management for producers. The funding provided to the industry through these programs will be driven by demand. Canada and Alberta are also committing an additional $69.667 million over three years to support the transition from existing programs to the new business risk management programs.

Program highlights

- A new stabilization and disaster program will be introduced to more effectively stabilize producers' incomes (including severe drops), while being affordable and flexible for producers.
- Crop insurance will be broadened to production insurance to better respond to the needs of today's producers. This may include providing coverage for more commodities, increasing options for diverse farming operations, and developing innovative insurance tools based on new technology, such as satellite imagery.

Branding Canada and Maximizing International Opportunities

Canada's agriculture and agri-food sector enjoys a positive image abroad, and has been recognized for its ability to deliver consistently safe and high-quality agri-food products. This success has helped Canada become the world's third-largest exporter of agriculture and food products.

The programs, services, and tools the APF supports will help the industry remain world leaders in food safety and food quality, the environment, renewal, and science and innovation. Improvements will provide the basis for continued work on positioning the Canadian agriculture and agri-food sector as the world leader, and for strengthening Canada's position in global markets.

Governments will work together to increase international opportunities and recognition for the sector by branding the Canadian agriculture and agri-food sector, and by fostering market opportunities. Work on trade issues will also be strengthened to obtain better access for Canadian products by reducing traditional barriers and overcoming newer technical barriers.

Governments will work regularly with the sector through roundtable discussions to assist with the development of marketing and branding strategies, and to help establish priorities to ensure that the details of government policy support expanding markets abroad.

Canada-Alberta Implementation Agreement — Exerpts

Excerpts from the Federal-Provincial-Territorial Framework Agreement on Agricultural and Agri-Food Policy for the Twenty-First Century (as taken from the Agriculture and Agri-food Canada website in Aug 2003 at **http://www.agr.gc.ca/cb/apf/index_e.php?section=info&group=impl&page=ab_01**

Section A, Business Risk Management

Common Goals

15.1 The Parties agree to pursue the following common outcome goals:

- 15.1.1 to improve the tools available to producers for the purpose of managing business risk
- 15.1.2 to ensure that these tools are designed as incentives for producers to increase profitability through growth, diversification, value-added activity, and other means.

15.2 The Parties agree to pursue the following common management goal:

- 15.2.1 to develop a common risk management program base across Canada in which program eligibility and payment calculation provisions are jointly agreed to by governments, and are cost shared with producers on a federal-provincial-territorial basis.

16 Targets and Indicators

16.1 The Parties agree to use the following principles for the design and evaluation of risk management programs:

- 16.1.1 minimizing countervail risk;
- 16.1.2 minimizing the distortion of farmers' production and marketing decisions;
- 16.1.3 focussing on the management of risks related to the stability of the entire farm entity and avoiding duplication of payments;
- 16.1.4 encouraging the use of risk management practices and the use and development of private sector risk management tools;
- 16.1.5 being relatively simple to administer and easily understandable;
- 16.1.6 minimizing the capitalization of program benefits;
- 16.1.7 contributing to profitability through innovation and value-added activity;
- 16.1.8 assisting in the management of risks related to environmental stewardship and food safety
- 16.1.9 facilitating long-term planning by farmers.

16.2 The Parties shall establish specific targets with respect to the principles set out in clause 16.1.

16.3 The Parties further agree to measure progress using the following indicators:

- 16.3.1 comparing farmers' aggregate sector margin to the five-year average in order to determine the extent to which farm incomes have been stabilized by risk management programs
- 16.3.2 analysing commodity mixes in order to determine the extent to which profitability and competitiveness have been strengthened
- 16.3.3 tracking the usage of private and public risk management tools and strategic planning practices by farmers in order to determine the extent to which whole-farm risks are being covered
- 16.3.4 analysing administrative procedures in order to monitor improvements in the administrative efficiency of risk management programs.

17 Supply Management

17.1 For the purposes of supply-managed commodities, supply management constitutes a risk management tool.

18 Implementation Measures

18.1 To achieve the objectives and principles of clauses 15 and 16, the Parties agree to work with stakeholders to use Existing Programs as a foundation for new risk management programming and agree to work with stakeholders towards making improvements that are necessary to expand the ability of these programs to provide for insurance coverage, income stabilization, disaster mitigation and support for investments.

18.2 The Parties agree to assess, each year, the degree to which risk management programs are achieving the goals set out in clause 18.1.

18.3 The Parties agree, in consultation with stakeholders, to develop improvements to production insurance programs that would provide farmers in all Provinces and Territories with more programming options to cover production losses for a wide range of agricultural products, including livestock, and that will include whole-farm and "basket of crops" benefit options.

18.4 The options under clause 18.3 shall ensure that actuarial calculations take into account the full range of activities that have an impact on a farmer's risk profile, ensure premiums reflect that accordingly, and enable a farmer's track record to be taken into account when new enterprises are undertaken by that farmer.

18.5 The Parties agree to develop a federal-provincial-territorial performance model on which these improved production insurance programs would be based, the purpose of which would be to:

- 18.5.1 strengthen, through the use of incentives, linkages between production insurance and the other elements of the Framework Agreement
- 18.5.2 contribute to universality of access
- 18.5.3 provide comprehensiveness of protection

18.5.4 provide cost-effective and transparent program delivery

18.5.5 promote adherence to sound insurance and actuarial principles.

18.6 The Parties agree to develop, for the use of interested Provinces and Territories, shared capacity to improve program delivery efficiency.

18.7 The Parties agree, in consultation with stakeholders, to develop improvements to the NISA program that would:

18.7.1 expand its ability to provide for income stabilization and disaster mitigation;

18.7.2 provide a means for beginning farmers to make better use of the NISA program

18.7.3 provide support for investments made by farmers in activities that strengthen profitability.

18.8 After consulting with stakeholders, the Parties shall implement clause 18.7 by amending the existing agreements with respect to the NISA program. The amendments are to be executed, in a timely manner, so that the modified NISA program can be implemented by April 1, 2003.

18.9 After consulting with stakeholders, the Parties shall implement clause 18.3 by amending the existing agreements with respect to the Crop Insurance program. The amendments are to be executed, in a timely manner, so that the full range of production insurance options can be made available no later than the 2005 crop year.

18.10 The Parties agree to work with the private sector to develop, prior to April 2005, new risk management instruments and protocols to provide for business interruption coverage.

18.11 The Parties agree to develop and maintain an integrated database system for the delivery, by the Parties or their delivery agents, of business risk management programs and other related programs under the Framework Agreement. For that purpose, and for the purposes of audit, evaluation, design and analysis, the Parties agree to share all producer and administrative data required to deliver the programs, in a manner consistent with applicable privacy legislation.

18.12 The Parties agree that the Fall Cash Advance Program is a risk management program, and funding provided by Canada for that program shall count as funding for risk management programs for purposes of Part One of the Framework Agreement.

Section B Food Safety and Food Quality

Common Goals

20.1 The Parties agree to work with industry and consumers on the following food safety and food quality common outcome goals:

20.1.1 to protect human health by reducing exposure to Hazards

20.1.2 to increase consumer confidence in the safety and quality of food produced in Canada

20.1.3 to increase industry's ability to meet or to exceed market requirements for food safety and food quality

20.1.4 to provide value-added opportunities through the adoption of food safety and food quality systems.

20.2 The Parties agree on the following food safety and food quality common management goals:

20.2.1 to work with industry towards the development and implementation by industry of government-recognized food safety and food quality process control systems throughout the agri-food continuum

20.2.2 to increase significantly the quality, quantity and availability of data or other information to support the development of risk management strategies and industry-led food safety and food quality process control systems

20.2.3 to establish governance systems to allow for integrated policy development and legislative harmonization among the Parties.

21 Targets and Indicator

21.1 The Parties agree to work with industry towards reaching the following food safety and food quality targets by the end of the Implementation Period:

21.1.1 the development of, or participation in, industry-developed and government-recognized on-farm food safety process control systems by all commodity sectors

21.1.2 the participation in food safety process control systems, developed or to be developed by industry and recognized by government, of all sectors of the agri- food continuum to the retail level

21.1.3 the participation in food process control systems for quality, developed or to be developed by industry and recognized by government, by all sectors requesting a national system for food quality to meet market requirements and consumer demands

21.1.4 the development by industry of traceability systems which would allow for eighty (80) per cent of domestic products available at the retail level to be traceable through the agri-food continuum

21.1.5 the development by industry of traceability components for all products/commodities within the food quality and food safety control systems.

21.2 The Parties further agree on the following targets and indicators:

21.2.1 an increase in the rate of transfer of technology arising from publicly-supported research and development to support Hazard detection and control

21.2.2 the sharing among governments and, where appropriate, with industry and other partners, of relevant data and information to support public health and food safety systems, and the ready availability of such data and information.

22 Implementation Measures

22.1 The Parties agree to work with industry and, where appropriate, other stakeholders, to put in place the following implementation measures:

Food Safety

22.1.1 to offer funding, program and technical assistance to facilitate industry development and implementation of process control systems recognized or to be recognized by government

22.1.2 to introduce measures to facilitate the development by industry of food safety training materials and appropriate training courses

22.1.3 to establish a credible and co-ordinated system that allows for recognition by Canada of food safety process control systems, the administration of which could be done in collaboration with the Parties, including the completion of the design for a national recognition system for on-farm food safety programs by the end of 2003 and the expansion of government recognition to other sectors in the agri-food continuum as requested

22.1.4 to work with health ministers, where appropriate, towards the development of a national mechanism for integrated decision-making on food safety matters

22.1.5 to enhance food safety surveillance systems and public health surveillance systems as they relate to food safety within the Parties' jurisdictions by:

22.1.5.1 completing an inventory and analysis of existing information gathering and dissemination systems by the end of 2003;

22.1.5.2 identifying any legal implications associated with information gathering, sharing and dissemination, and developing a proposed strategy for addressing these implications by the end of 2004;

22.1.5.3 developing a proposed strategy and implementation plan for improved food safety surveillance and public health surveillance, information sharing and dissemination by 2005; and

22.1.5.4 working towards improving the legislative framework and decision-making process for food safety, including outcome-based national standards and legislative harmonization. The Parties further agree to jointly develop a work plan for model legislation for consideration by June 2003 and to work towards incorporating model legislation into their legislative systems by the end of the Implementation Period.

Food Quality

22.1.6 to promote international acceptance of Canadian agricultural and agri-food products and to meet market requirements and consumer demands by establishing, where appropriate and at the request of industry, national, credible and co-ordinated programs to facilitate the development by industry of food quality systems including, where appropriate, funding, technical assistance and government recognition.

Traceability

22.1.7 to facilitate the development and implementation of traceability systems by industry throughout the agri-food continuum by, inter alia

22.1.7.1 assisting the agriculture and agri-food sector in the development of data management standards for traceability systems

22.1.7.2 continuing to support the development of traceability systems at the retail level

22.1.7.3 providing funding and technical support for development of traceability and Identity Preservation systems, along the agri-food continuum to the retail level.

Research for Food Safety and Food Quality

22.1.8 to coordinate research activities and promote technology transfer to:

22.1.8.1 improve food safety Hazard detection and control methodologies

22.1.8.2 identify risks and develop intervention strategies for the management of risks

22.1.8.3 support and improve the development and implementation of more effective industry-led food safety, traceability, and food quality systems.

22.2 The Parties recognize that industry is taking a leadership role in working to develop insurance coverage options with respect to food safety and traceability.

Section C Environment

Common Goals

24.1 The Parties agree to achieve, in collaboration with the agriculture sector and other stakeholders, the following common environmental outcome goals:

24.1.1 reduce agricultural risks and provide benefits to the health and supply of water, with key priority areas being nutrients, pathogens, pesticides and water conservation

24.1.2 reduce agricultural risks and provide benefits to the health of soils, with key priority areas being soil organic matter and soil erosion caused by water, wind or tillage

24.1.3 reduce agricultural risks and provide benefits to the health of air and the atmosphere, with key priority areas being particulate emissions, odours, and emissions of gases that contribute to global warming

24.1.4 ensure compatibility between biodiversity and agriculture, with key priority areas being habitat availability, species at risk, and economic damage to agriculture from wildlife.

24.2 The Parties agree to work, in collaboration with the agriculture sector and other stakeholders, towards the achievement of the following common farm environmental management goals:

24.2.1 the completion of a basic agri-environmental scan on all farms so as to identify farms and regions requiring corrective action

24.2.2 the completion of an agri-environmental farm plan or participation in an equivalent agri-environmental plan for all farms identified as requiring significant corrective action under the basic agri-environmental scan referred to in clause 24.2.1

24.2.3 the implementation of agri-environmental farm plans or equivalent agri-environmental plans and improved stewardship through the adoption of environmentally beneficial practices, as appropriate to the needs and circumstances of individual farms or regions, in the following areas:

Nutrient Management

24.2.3.1 increase the use of beneficial manure management practices, fertilizer management practices, nutrient management plans, and the degree to which nutrient application is proportionate with need

Pest Management

24.2.3.2 increase the use of beneficial pest and pesticide management practices

Land and Water Management

24.2.3.3 decrease the number of bare-soil days on farmland, increase no-till or conservation tillage, and improve management of riparian areas, grazing lands and water conservation and use

Nuisance Management

24.2.3.4 increase the use of better management practices related to odours and particulate emissions

Biodiversity Management

24.2.3.5 increase the use of management practices that promote compatibility between agriculture and biodiversity, and minimize economic damage from wildlife to agriculture.

24.3 For greater certainty, the goals referred to in clause 24.2 may be achieved on a voluntary basis.

25 Targets and Indicators

25.1 The Parties agree to set targets for the environmental outcome goals and farm environmental management goals through Implementation Agreements.

25.2 The Parties agree that indicators, as set out in clause 2 of Annex 1 to the Framework Agreement, will be used to measure the progress made in achieving the environmental outcome goals of the Framework Agreement. A Party may use additional indicators that are consistent with the environmental outcome goals of the Framework Agreement.

25.3 The Parties agree that indicators, as set out in clause 3 of Annex 1 to the Framework Agreement, will be used to measure progress made in achieving the farm environmental management goals of the Framework Agreement. A Party may use additional indicators that are consistent with the farm environmental management goals of the Framework Agreement

25.4 The basic agri-environmental scan referred to in clause 24.2.1 will take into account the agri-environmental factors that may pose a risk or provide benefits to air, soil, water and biodiversity. The Parties will agree on the agri-environmental factors to be used in the basic agri-environmental scan by no later than April 1, 2003.

25.5 The Parties recognize that measurement of the indicators under clause 25 of the Framework Agreement can only be performed over a period over which meaningful change can be detected. All Parties commit to measuring all indicators within the period of the Framework Agreement.

26 Implementation Measures

Sectoral Information and Awareness

26.1 The Parties agree to develop and use common agri-environmental indicators and other appropriate analytical tools as may be required to:

26.1.1 track and predict agri-environmental performance

26.1.2 increase public awareness

26.1.3 support policy and program development

26.1.4 report to the public.

26.2 The Parties agree to develop and use environmental monitoring networks to:

26.2.1 identify environmental conditions in geographic zones and trends attributable to agriculture

26.2.2 contribute to agri-environmental indicators

26.2.3 increase public awareness.

Stewardship Tools and Capacity

26.3 The Parties agree to conduct research and development to:

26.3.1 increase understanding of relationships between agriculture and the environment

26.3.2 develop and evaluate environmentally-beneficial agricultural production and management practices

26.3.3 establish agri-environmental standards that support the Common Goals for Environment.

26.4 The Parties agree to identify and assess emerging and innovative technologies and systems for environmentally responsible agriculture production and to provide this information to stakeholders in the agriculture sector.

26.5 The Parties agree to make available, to land use decision makers, decision tools and environmental information to support and inform local and regional agricultural land-use planning and management.

Farm Environmental Planning

26.6 The Parties agree to support the development and widespread use of basic agri-environmental scans and agri-environmental farm plans or equivalent agri-environmental plans to:

26.6.1 increase farmer environmental awareness

26.6.2 assess environmental risks and benefits from agricultural operations

26.6.3 mitigate environmental risks and realize environmental benefits from agricultural operations.

26.7 The Parties agree to facilitate the coordination and integration of environmental planning and management on a multi-farm basis.

Incentives for Accelerated Action

26.8 The Parties agree to establish cost-shared programs to provide incentives to:

26.8.1 address identified environmental risks from agriculture

26.8.2 enhance environmental benefits from agriculture.

26.9 For the purposes of clause 26.8, payments made under the programs will be guided by an agri-environmental farm plan, equivalent agri-environmental plan or any other acceptable means of ranking the expected environmental benefits of the actions proposed for funding.

26.10 The Parties agree to conduct a study of the way in which jurisdictions regulate agriculture as it affects the environment with a view to sharing best practices.

Securing Benefits for the Future

26.11 The Parties agree to develop, and make available to farmers, a voluntary and recognized farm environmental certification program.

26.12 The Parties agree to promote the development of:

26.12.1 agricultural goods and services that have recognized environmental benefits

26.12.2 market opportunities for such goods and services.

Section D Renewal

Common Goals

28.1 The Parties agree on the following renewal outcome goals for farmers:

28.1.1 to increase their profitability

28.1.2 to enable them to make choices about sources of income

28.1.3 to help them meet market and consumer demands respecting food safety and food quality and environmentally-responsible production

28.1.4 to help capture opportunities from science and innovation.

28.2 The Parties agree on the following renewal management goal:

28.2.1 to ensure farmers have access to public and private sector programs and services that will:

28.2.1.1 help beginning farmers acquire the requisite skills, knowledge, tools and risk management opportunities to be successful farm operators

28.2.1.2 help farmers upgrade management and technical skills, particularly as these skills relate to environmental management, food safety and food quality, new products and markets, and science and innovation

28.2.1.3 help farmers choosing to pursue alternative income opportunities develop the requisite skills to do so

28.2.1.4 help farmers planning a farm transfer to have the skills and options necessary to ensure a successful transition out of farming

28.2.1.5 help farmers to:

a) assess the performance and potential profitability of their farm business

b) enhance their ability to make business management decisions

c) explore and develop market opportunities.

28.3 For the purposes of clause 28.2, the targeting of programming will be established in the Implementation Agreements in a manner that respects the jurisdictions of the Provinces and Territories in the areas of training and education, and such targeting may vary in accordance with the composition of the agricultural sector in different Provinces, Territories and regions.

29 Targets and Indicators

29.1 The Parties agree that targets and indicators respecting the Common Goals for Renewal will be established in the Implementation Agreements.

29.2 The Parties shall refer to Annex 2 of the Framework Agreement, either in whole or in part, for the purposes of selecting targets and indicators referred to in clause 29.1.

30 Implementation Measures

30.1 The Parties agree to support and develop networks, before the end of the Implementation Period, relating to scientific and innovative advances so as to create new economic opportunities for farmers by:

30.1.1 promoting research to increase the transfer of technology resulting from advances in science and innovation

30.1.2 improving the dissemination of information relating to science and innovation

30.1.3 establishing or further developing programs to foster new economic opportunities through to commercial feasibility.

30.2 The Parties agree, before the end of the Implementation Period, to facilitate access to capital for beginning farmers and farmers expanding their business or moving into value-added and diversified production by:

30.2.1 improving access to, and awareness of, services that assist farmers in securing financing for farms and other agri-business ventures

30.2.2 encouraging private investors to engage in farm and agri-business opportunities.

30.3 The Parties agree, before the end of the Implementation Period, to support the enhancement of public and private management and consulting services providing business and succession information. Support may be provided by:

30.3.1 using contracted expertise or public expertise, or any combination thereof, to deliver services

30.3.2 creating greater awareness of advisory services in the private sector

30.3.3 improving access to advisory services and training, including the possibility of implementing a voucher system to access both public and private advisory services.

30.4 The Parties agree to develop options to respond to situations where farmers may not otherwise qualify for, or be adequately covered by, risk management programs.

30.5 The Parties agree to make benchmark management and marketing information available to assist farmers in enhancing their profitability.

30.6 The Parties agree to establish, before the end of the Implementation Period, a joint public and private process to develop a consensus on the types of skills, including regional and sector specific skills and other labour market information, that are needed for the future development of the agriculture sector. When those processes already exist in a Province or Territory, the roles and responsibilities of that Province or Territory will be respected.

30.7 The Parties agree to help change attitudes and behaviours regarding advice and business planning, to make a follow-up service available to assist farmers in making decisions on their future and to increase awareness of renewal programming. The Parties agree to adopt such measures as:

30.7.1 support mechanisms such as farm management clubs, "syndicats de gestion" and beginning farmer networks

30.7.2 develop access to mentoring, networking and peer support

30.7.3 provide access to available information regarding best practices used by the most profitable farms identified by region and sector.

30.8 The Parties agree to promote learning opportunities in business management, environmental management, food safety and food quality in order to meet the objectives of the Framework Agreement.

30.9 The Parties agree to provide access to training and support programs for farmers who, in their pursuit of off-farm options, choose to further develop and apply their skills to other career-related activities.

31 Co-Operatives

31.1 The Parties recognize that co-operatives have long been important to the development of the agricultural sector, and, for the purposes of the Framework Agreement, constitute a risk management and renewal.

Section E Science & Innovation

Common Goals

33.1 The Parties agree on the following common goals in the development of science and innovation programs:

Realigning Public Science Resources

33.1.1 realign and increase investments to support science and innovation in the priority areas, as well as in biomass, bio-product and bio-process research

33.1.2 increase the level of investment in innovation in agricultural and bio-products from non-agricultural sources within Canada and elsewhere

Co-ordinating Along the Whole Value Chain

33.1.3 expand and strengthen linkages between the agriculture and agri-food sector and the science and innovation community both within Canada and internationally

33.1.4 improve technology transfer, coordination, communication and collaboration across market, policy and scientific disciplines, research organizations and throughout the value chain

Creating an Innovation Climate

33.1.5 accelerate the development and adoption of innovations in the agriculture and agri-food sector while maintaining an effective science-based and transparent agriculture and agri-food regulatory system

33.1.6 ensure that the human resources and infrastructure needed for science and innovation in the agriculture and agri-food sector are available in Canada

33.1.7 foster a supportive climate for investment, technology transfer and commercialization in Canada

33.1.8 better utilize intellectual property from publicly supported research to enhance the growth of the agriculture and agri-food sector.

33.2 The Parties will take into account social and ethical considerations when making decisions in respect of the Common Goals for Science and Innovation.

34 Targets and Indicators

34.1 The Parties agree to use indicators to measure the progress in relation to the Common Goals for Science and Innovation. These indicators shall include, but are not limited to:

Realigning Public Science Resources

34.1.1 levels of investment by the Parties, academic institutions and industry in science and innovation in the priority areas and in bio-products

34.1.2 levels of investment by non-agricultural sources in science and innovation in the priority areas

Co-ordinating Along the Whole Value Chain

34.1.3 the number of collaborative arrangements based on science and innovation across the value chain

Creating an Innovation Climate

34.1.4 the number of producers that become engaged in value chain activities beyond production of the raw commodity

34.1.5 the market share of bio-products produced in Canada

34.1.6 the impact on rural economic development of investments or economic activity in bio-products and the priority areas

34.1.7 the number of publications, licensing agreements and patents awarded in the agriculture and agri-food sector

34.1.8 the number of people employed in the bio-based economy

34.1.9 the number of persons enrolled in post secondary institutions in subjects related to the bio-based economy

34.1.10 employers' access to skilled labour in the bio-based economy

34.1.11 the number of new research and innovative projects that are commercialized.

35 Implementation Measures

Realigning Public Science Resources

35.1 The Parties agree to undertake a benchmark study, by no later than July 2003, on the current levels of investment in science and innovation in relation to the priority areas and bio-mass, bio-products and bio-processes.

35.2 The Parties agree to use the benchmark study referred to in clause 35.1, no later than December 2003, to devise and implement an action plan that will realign public sector investment in agriculture and agri-food research and science innovation in a manner that is consistent with the Common Goals identified in the Framework Agreement.

35.3 The Parties will communicate the action plan to the various bodies responsible for funding scientific research and will encourage greater collaboration among disciplines so that the Common Goals identified in the Framework Agreement may be promoted in the science and innovation community.

Co-ordinating Along the Whole Value Chain

35.4 The Parties will encourage public and private sector institutions to align their science and innovation priorities in a manner consistent with the Common Goals identified in the Framework Agreement.

35.5 The Parties will jointly develop, by no later than July 2003, a common information base about selected commodities and the adoption of technology within the value chain. The information will identify the stakeholders in the value chain, including government departments.

35.6 The Parties agree to develop a strategy, by no later than December 2003, to build stronger links throughout the

value chain. The tools to be used in the strategy may include, but are not limited to:

35.6.1 a science/policy/market/innovation summit

35.6.2 pilot projects with industry and academic and research institutions

35.6.3 web sites

35.6.4 research co-ordination

35.6.5 life cycle cost analysis on bio-products.

35.7 The strategy referred to in clause 35.6 will be used to:

35.7.1 improve collaboration among and within governments, academic institutions and industry

35.7.2 develop partnerings with non-traditional sectors such as environment and energy.

The strategy will be implemented by the Parties by no later than March 2004.

Creating an Innovation Climate

35.8 The Parties will facilitate the adoption of new economic opportunities based on innovative bio-products and knowledge, as well as the development of opportunities in the priority areas, through initiatives such as:

35.8.1 promoting business climate policies that will encourage access to capital for research, development and innovation

35.8.2 promoting the establishment of practices in a manner that will facilitate success by Canadian enterprises in new and premium markets

35.8.3 supporting mechanisms and infrastructure, including business-mentoring techniques, centres for innovation, incubators and physical infrastructure

35.8.4 encouraging the establishment and growth of research facilities that attract world class scientists and advance innovation in the agriculture and the agri-food sector.

35.9 The Parties agree to assess, by no later than December 2003, the human resource and related infrastructure needs of enterprises, institutions and governments necessary to develop science and innovation in agriculture and agri-food sector. The Parties will communicate, by no later than May 2004, the results of the assessment to relevant departments in their respective governments.

35.10 The Parties agree to undertake consultations as needed, by no later than July 2004, with business, government and academic institutions, to develop approaches on the management of intellectual property to better serve the agriculture and agri-food sector.

35.11 The Parties agree to develop, by no later than 2004, a strategy to increase investment in Canada's agricultural bio-based economy. The Parties agree to implement the strategy by June 2005.

Branding Canada and Maximizing International Opportunities

36 The Parties acknowledge that, to realize the full benefits offered by the Framework Agreement, Canada's agriculture and agri-food sector must be recognized by the marketplace as the world leader in:

36.1 supplying high-quality food and safe food produced in an environmentally-responsible manner; and

36.2 meeting the demands of a highly-segmented world market and adapting to those demands as they change.

The Parties therefore agree to work together to achieve this recognition in order to assist the sector to increase sales in both domestic and foreign markets, attract investment and increase profitability.

37 The Parties agree to support the branding of Canada in a manner that builds the reputation of Canada and supports provincial, territorial, industry and company brands, and to work with the sector to:

37.1 develop a better understanding of the changing demands in the international and domestic marketplace, including,

37.1.1 consumer expectations respecting food safety, environment and other attributes

37.1.2 sourcing requirements of corporate food buyers

37.1.3 requirements imposed by foreign governments

37.2 take into account the changing demands of the marketplace referred to in 37.1 in implementing the Framework Agreement;

37.3 develop consistent branding messages and deliver them to the marketplace so that the marketplace recognizes Canada's leadership in responding to market demands

37.4 target established markets and high potential emerging markets by developing strategies that integrate market development, investment, market access and technical assistance activities so as to ensure that the sector can take advantage of the Canada brand.

38 The Parties recognize that further progress on trade reform is essential to maximize the benefits for the agriculture and agri-food sector of the branding of Canada in foreign markets. The Parties therefore agree that:

38.1 Canada will take a leadership role in international organizations to influence and shape discussions on technical trade issues in a manner that furthers the objectives of the Framework Agreement;

38.2 the Parties will work together to build stronger partnerships with developing countries by enhancing capacity building assistance to help these countries better participate in and benefit from the global agriculture and agri-food market

38.3 The Parties will work together to improve coordination through enhanced information sharing, planning and joint activities so as to advance Canada's agriculture and agri-food interests in key countries and with key international institutions and organizations.

Appendix B

Draft – August, 2003

Alberta's Agri-Food Industry

GROWTH STRATEGY

$20/$10 by 2010

Alberta
AGRICULTURE, FOOD AND RURAL DEVELOPMENT

Growth Strategy - Alberta's Agri-Food Industry

Introduction

Achieving a $20 billion value added agriculture industry and a $10 billion primary industry has been discussed and debated many times within Alberta Agriculture, Food and Rural Development (AAFRD) and by industry as a whole.

When AAFRD began talking about the $20/10 billion opportunity in the mid 1990's, it was considered a stretch target. There were no mechanisms in place by government or industry to seriously consider it as a real opportunity. There was no game plan; however, AAFRD has over time incorporated and identified the opportunity in its business plan. Industry organizations also began to incorporate it into their planning as well.

The attached growth strategy is an effort to paint a picture of what a $20/10 billion industry could potentially look like in 2010. The strategy has been developed with the awareness that in the past year Alberta has faced severe drought conditions that have had and will continue to have an impact on certain sectors of our industry. In addition, the strategy recognizes that the agriculture and food industry is encountering many other challenges such as the ones presented by the new U.S. Farm Bill.

With these immediate challenges in mind, the growth strategy predicts very little growth in the short term. The strategy instead focuses on customer solutions, such as policy and program changes, that need to be addressed over the next two to three years in order to encourage development of new industries and facilitate long-term growth in established sectors.

The strategy identifies five key industry sectors that have significant opportunities for growth (ie. growth of $1 billion or more by 2010). It also identifies important

opportunities with possibly less significant growth potential in other sectors of the agriculture and food industry.

In addition to identifying areas of potential growth, the strategy attempts to identify significant constraints or barriers that will have to be resolved in order for growth to occur. These constraints will have to be addressed as fully as possible along with recommendations for policy and program changes. This will involve both government and industry working together towards achieving the industry opportunity of $20/10 by 2010.

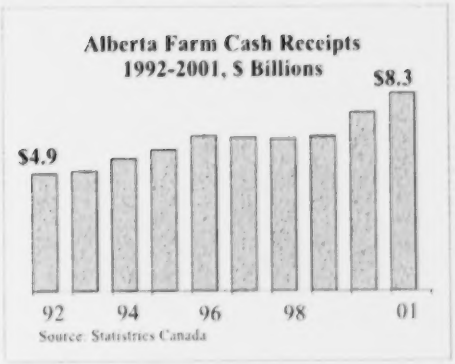
The strategy has been developed in coordination with other strategic initiatives in the province, including the *Alberta Value Added Strategy* and the *Alberta Agricultural Research and Innovation Strategic Framework*. The Value Added Strategy is a cross ministry initiative, involving nine government departments, to develop an integrated value added strategy for the province. The Agricultural Research and Innovation Strategic Framework is intended to leverage funds and provide direction and focus to the R & D system in Alberta.

State of the Industry

With $8.3 billion in farm cash receipts (yr 2001) and more than 51 million acres used for crop and livestock production, Alberta has developed one of the world's most productive agricultural economies. For example, Alberta accounts for 22.9% of Canadian agricultural production with only 9% of Canada's population. In 2001, livestock receipts accounted for $5.3 billion or 62.5% of total receipts. Crop receipts were $2.3 billion (27.6%) and direct payments to farmers were $819 million (9.9%). At the end of 2001, there were 59,500 persons employed in primary agriculture.

Alberta is the largest beef producing province in Canada. The province leads the nation in cattle and calf inventories, accounting for 6.6 million head or 42% of the national total in 2001. Alberta is also a leader in hog production, accounting for 14.8% ($570 million) of Canada's farm cash receipts from the sale of hogs. Dairy, poultry and egg production generated $547 million in farm cash receipts in 2001. The province's crop production contributes just under 17% of national farm cash receipts, with the major crops being wheat, barley, canola and oats.

From 1992 to 2001, Alberta farm cash receipts grew from $4.9 billion to $8.3 billion. Cash receipts are forecast to decline by 2.6% to $8.08 billion in 2002, and subsequently rise by 1.9% to $8.23 in 2003. Both of these totals are surpassed only by the record $8.3 billion achieved in 2001. The decrease in 2002 receipts stems from projected declines of 12.3% and 3.5% in crop and livestock receipts, respectively. These estimates reflect the impact of this year's drought, and include payments under drought-related government disaster assistance to farmers. Projections for 2003 are based on the assumption that market and production conditions will generally return to normal levels.



Farm Cash Receipts & Exports, 2001

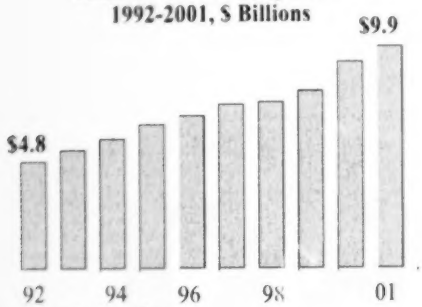
Product Category	Receipts ($000,000)	Exports ($000,000)
Livestock Total	5,189	863.0
Hogs	570	711.9
Cattle and Calves	3,952	287.8
Dairy	348	N/A
Crops Total	2,291	2,180.8
Wheat	914	1,230.8
Barley	212	162.6
Canola	574	447.7
Direct Payments Total	819	N/A
Total	**8,299**	**2,947.8**

The agri-food processing sector is Alberta's largest manufacturing sector, accounting for $9.9 billion in value of shipments in 2001. The sector generated 23.3% of all manufactured goods, ahead of the next largest sectors of petroleum and coal products (17.5%) and chemical products (16.3%). The sector employs 23,000 people and consists of over 500 firms located throughout Alberta.

Nearly three-quarters of Alberta's agri-food manufacturing activity is concentrated in two segments. Overall agri-food production continues to be dominated by meat products which accounted for 56% ($5.1 billion) of total shipments in 2001. Dairy products comprise the next largest segment at 17% ($1.5 billion). The distribution of the remaining 27% of food shipments is diverse ranging from grain and oilseed milling (the third largest food segment) to bakeries and tortilla manufacturing.

Alberta processors experienced a ten-year expansionary phase in shipments from 1992 to 2001. Despite a slowdown in 1998, consecutive record levels have been posted every year since1992, which has resulted in shipments approaching the $10 billion mark for the first time ever in 2001. Both 2000 and 2001 were very positive years with gains of 16.6% and 7.5%, respectively.

Alberta Value of Shipments 1992-2001, $ Billions



Source: Statistics Canada

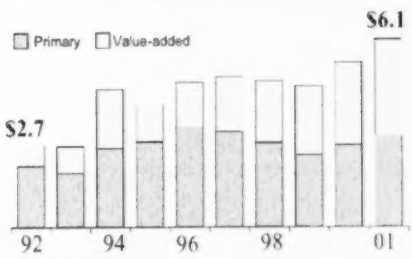
Value of Shipments & Exports, 2001

Product Category	Shipments ($000,000)	Exports ($000,000)
Meat/Meat Products	5,156.9	2,201.9
Dairy Products	1,532.7	12.4
Grains & Oilseeds	799.9	287.8
Beverage Products	727.1	74.1
Animal Food Mfg.	596.9	180.9
Baked Goods/ Tortilla Mfg.	254.5	58.6
Other Food Products	818.3	57.6
Total Food & Beverage	**9,886.3**	**2,873.3**

Key Value-Added Players: Lakeside Packers (IBP), Cargill Foods, XL Foods, Centennial Food, Olymel, Maple Leaf Foods, Parmalat Canada, Saputo Milk, Lamb-Weston, McCain Foods, Lilydale Foods

In 2001, International exports of agri-food products were valued at $6.0 billion. From 1997 to 2001, export revenue from value added products grew by 75% - a sharp contrast to the 9.7 % decline by raw commodity exports. Value added exports now account for 51.3% of Alberta's total agri-food exports, up from 36% in 1997. The United States is Alberta's largest export market; exports increased by 185 % in the period 1992 to 2001. Agri-food exports to the U.S. were valued at $3.3 billion in 2001. Japan was the next largest export market at $793 million.

Alberta Agri-Food Exports 1992-2001, $ Billions



Source: Statistics Canada

Agri-Food Exports, 1992-2001

Year	Primary ($000,000)	Value-Added ($000,000)	Total ($000,000)
1992	2,012.9	694.9	2,707.8
1993	1,756.8	875.8	2,632.6
1994	2,544.9	1,095.8	3,640.7
1995	2,752.2	1,248.9	4,001.1
1996	3,265.0	1,431.9	4,696.9
1997	3,093.1	1,775.0	4,868.1
1998	2,738.9	1,975.4	4,714.4
1999	2,315.0	2,230.2	4,545.2
2000	2,646.3	2,649.1	5,295.4
2001	2,947.8	3,109.7	6,057.5

Overarching Issues Impacting Growth

Global market opportunities offer Alberta the potential to substantially increase its agri-food industry to $10 billion in primary production and $20 billion in value-added processing by 2010. However, a number of overarching issues impacting the growth of the agri-food industry as a whole include:

Global Trade and Market Development – This issue is key to growth of the value added agriculture industry as significant growth will not occur without reasonable access to existing and new markets. Increased focus on market development initiatives will be necessary, and increasing our knowledge of potential export markets will be critical. Non-tariff barriers (eg. U.S. homeland security policies) pose a threat to our existing export markets.

Policy – Government and trade policies can have significant impact on the development and growth of an industry.

- Policy changes will be required in order to facilitate the development of new and emerging industries. Examples include an ethanol policy and domestic regulations allowing health claims on nutraceuticals.
- A strategy needs to be developed and implemented to deal with the potential impact of the U.S. Farm Bill and U.S food security regulations on Alberta's feed grain and livestock industries.
- Inter-provincial trade barriers need to be reduced in areas such as transportation and food safety regulations to allow for an easier flow of goods and services.
- Proactive changes are required to the domestic regulatory framework in areas such as the Canadian Wheat Board.

Research and Development - A provincial agricultural research and innovation strategy is being developed by multiple stakeholders to address issues in the current R & D system. Several key issues need to be addressed in the system, including the need for innovation, clear direction and focus, and the need for a system to be well funded, effective, accountable and efficient.

Technology Adoption and Commercialization – There is a need to enhance and further build on Alberta's ability to scale up and commercialize scientific and technological developments. This includes both new and existing technologies. A initiative should be pursued to establish a food business incubator which can adapt, test and pilot new products and business opportunities.

Management/Labour Supply and Training – The lack of management expertise, general labour skills and available labour supply are serious issues in several sectors of the industry. Some management development, leadership and worker training programs have been developed for the industry, but these programs will need to be enhanced. Certain industry sectors have significant turnover rates. Programs focused on improved management expertise, labour skills and worker retention will have to be developed.

Water Supply - Availability of water is essential to the growth of the agriculture and food industry. The Alberta government is currently developing a provincial water strategy, with input from AAFRD. Issues to consider are:

- More efficient methods for the reduction of water use need to be developed and implemented.
- Industry and government must ensure that the water supply is protected.
- Industry can work more closely with the provincial and municipal governments to secure a water supply.

Investment - Approximately $3.2 billion of capital investment in primary production and up to $4.6 billion in value added processing will be needed over the next eight years in order to achieve the $20/10 billion opportunity. As a result, a concerted and focused effort to attract significant capital investment will need to be a major priority. Clear leadership and actions, backed by funding, need to be established and exhibited.

On a North American wide basis, capital funds are being diverted to pay down debt and are being stretched by remodeling old facilities as opposed to building new plants. The food processing industry is not in an expansionary phase. Most new investment in Alberta will result from relocation of existing facilities in expectation of higher profitability in Alberta. Decisions on where to invest traditionally have been made on the basis of raw materials, labour supply and operating costs.

Infrastructure - A $20/10 billion industry will require strong infrastructure to support it. The existing municipal water/wastewater infrastructure program has been a successful component in attracting new investment in food processing to Alberta. Enhancements to this program could help support other infrastructure requirements of the industry.

The $20/10 Billion Growth Opportunity

Based on Alberta's competitive advantage, potential is seen in many areas. Table A provides a summary of the growth opportunities in the primary production and value-added sectors of Alberta's agriculture and food industry. For each of the sectors it includes a level of current activity (as measured by cash receipts or value of shipments in 2001), the potential opportunity for 2010, and the capital investment required in the next eight years to achieve the 2010 opportunities.

Specific growth strategies have been developed for five key sectors of Alberta's agriculture and food industry. These include beef, pork, processed meats/ready meals, nutraceuticals/ functional foods and non-food/industrial uses.

The five sectors identified are ones with significant growth potential (ie. contributing $1 billion or more in growth by 2010), where Alberta has clear advantages and fits with industry's technological, production and human resource capabilities. Major successes in these key sectors will help create the "critical mass" needed to spur growth of the agri-food industry to $10 billion (primary production) and $20 billion (value-added) by 2010.

Details on the five key sector growth strategies are contained in Appendix A. Each of the strategies provides:

- Description of the Sector
- Current State of Industry (including level of activity in 2001)
- 2010 Growth Scenario (areas and levels of potential growth)
- Value of the 2010 Opportunities
- Key Drivers of Growth
- Strategies
- Timeline of Milestones

A number of important opportunities, with possibly less significant growth potential, also exist in other sectors of the agriculture and food industry. Appendix B provides a brief overview of these opportunities by identifying key drivers and growth scenarios for 2010.

Table A

Primary Production ($ Billions)

Sector	2001 Receipts	2010 Opportunity	Capital Investment
Beef	$3.95	$6.0	$1.0-1.2
Hogs	$0.57	$1.0	$0.70
Other Livestock*	$0.65	$1.0	$0.2 - 0.3
Crops	$2.3	$4.0	$0.5 – 1.0
Sub-Total	**$7.48**	**$12.0**	**$2.4 – 3.2**
Direct Payments	$0.82		
Total	**$8.3**		

*Other livestock includes poultry,eggs, dairy, sheep, diversified livestock and horses.

Value-Added ($Billions)

Sector	2001 Shipments	2010 Opportunity	Capital Investment
Beef	$3.1	$5.0	$0.2 - 0.25
Pork	$0.70	$1.7	$0.08 - 0.12
Processed Meats	$0.85	$3.0	$0.3 - 0.5
Nutraceuticals/ Functional Foods	$0.05	$0.5 - 1.0	$0.3 - 0.7
Non-Food/ Industrial	$0.08	$0.8 -1.0	$0.6 - 1.0
Crops Processing	$1.2	$1.9	$0.8 - 1.0
Dairy	$1.5	$2.0	$0.15 - 0.2
Beverages	$0.73	$1.0	$0.1- 0.15
Potato	$0.30	$0.85	$0.15 - 0.2
Animal Food Mfg. (Inc. Feed)	$0.60	$1.0	$0.12 - 0.15
Other Products & Services	$0.8	$1.5 - 2.0	$0.2 - 0.3
Total	**$9.9**	**$20.0**	**$3.0 – 4.6**

*Other products includes poultry, snack foods, vegetable processing (other than potato), confectionery, pet food, animal by-products, etc.

The $20/10 Billion Growth Opportunity

Based on Alberta's competitive advantage, potential is seen in many areas. Table A provides a summary of the growth opportunities in the primary production and value-added sectors of Alberta's agriculture and food industry. For each of the sectors it includes a level of current activity (as measured by cash receipts or value of shipments in 2001), the potential opportunity for 2010, and the capital investment required in the next eight years to achieve the 2010 opportunities.

Specific growth strategies have been developed for five key sectors of Alberta's agriculture and food industry. These include beef, pork, processed meats ready meals, nutraceuticals/ functional foods and non-food industrial uses.

The five sectors identified are ones with significant growth potential (ie. contributing $1 billion or more in growth by 2010), where Alberta has clear advantages and fits with industry's technological, production and human resource capabilities. Major successes in these key sectors will help create the "critical mass" needed to spur growth of the agri-food industry to $10 billion (primary production) and $20 billion (value-added) by 2010.

Details on the five key sector growth strategies are contained in Appendix A. Each of the strategies provides:

- Description of the Sector
- Current State of Industry (including level of activity in 2001)
- 2010 Growth Scenario (areas and levels of potential growth)
- Value of the 2010 Opportunities
- Key Drivers of Growth
- Strategies
- Timeline of Milestones

A number of important opportunities, with possibly less significant growth potential, also exist in other sectors of the agriculture and food industry. Appendix B provides a brief overview of these opportunities by identifying key drivers and growth scenarios for 2010.

Table A

Primary Production ($ Billions)

Sector	2001 Receipts	2010 Opportunity	Capital Investment
Beef	$3.93	$6.0	$1.0-1.2
Hogs	$0.57	$1.0	$0.70
Other Livestock*	$0.65	$1.0	$0.2 - 0.3
Crops	$2.3	$4.0	$0.5 – 1.0
Sub-Total	**$7.48**	**$12.0**	**$2.4 – 3.2**
Direct Payments	$0.82		
Total	**$8.3**		

*Other livestock includes poultry, eggs, dairy, sheep, farmed cervid, ostrich and bison.

Value-Added ($Billions)

Sector	2001 Shipments	2010 Opportunity	Capital Investment
Beef	$3.1	$5.0	$0.2 - 0.25
Pork	$0.70	$1.7	$0.08 - 0.12
Processed Meats	$0.85	$3.0	$0.3 - 0.5
Nutraceuticals/ Functional Foods	$0.05	$0.5 - 1.0	$0.3 - 0.7
Non-Food Industrial	$0.08	$0.8 -1.0	$0.6 - 1.0
Crops Processing	$1.2	$1.9	$0.8 - 1.0
Dairy	$1.5	$2.0	$0.15 - 0.2
Beverages	$0.73	$1.0	$0.1- 0.15
Potato	$0.30	$0.85	$0.15 - 0.2
Animal Feed Mfg. (Inc. Feed)	$0.60	$1.0	$0.12 - 0.15
Other Products & Services	$0.8	$1.5 - 2.0	$0.2 - 0.3
Total	**$9.9**	**$20.0**	**$3.0 – 4.6**

*Crop product value (grains, oilseeds, specialty crops, processing value-added activities, pet food, animal by-product use)

Considerations for Future Programs

Approximately $150 million of program funding over the next seven years has been identified to support the investment and customer solutions needed to achieve these aggressive growth opportunities. This level of support offers substantial return, and is quite modest in comparison to the $1.5 billion of direct payments to producers over the last two years (2000 & 2001). About $90 million would be needed in the initial two years of implementation of the growth strategy.

Research and Development

Research and Development Fund – $50 million

Enhanced research, development and commercialization support will provide for sustainable growth of a viable production base and for further expansion of the value added agriculture industry. Strategic investment in innovation, including applied research and technology commercialization, represent a clear opportunity for Alberta. Examples of projects suitable for funding include:

- Annual support for applied research associations
- Enhanced processing equipment at the FPDC and CAIT

Business Incubator - $12 million

Developing companies would be able to migrate from the FPDC or enter the incubator directly depending upon their circumstances or stage of development. The incubator would be an interim step (1-2 years) for companies before establishing their own stand alone operations or entering into a partnership arrangement with an existing processor.

CAIT, which is in leased premises, will be unsuitable in the long term and could be incorporated into the incubator. This is a preferred alternative for CAIT's relocation because it would allow for more flexibility in the commercialization of products.

Agri-Food Development Centre – U. of A. (Discovery Place) - $6 mil. of a total $12 mil.

Research facility to develop new technologies in support of fractionation, ingredient extraction, identification of high value ingredients, conversion technology development and product development in areas of health, food, functional food, nutraceutical, bio-material and bio-chemical development. Would create a cluster in the Edmonton area for research, innovation and commercialization in value added crops area. Some of the technologies could also apply to forestry, livestock, cosmetics and energy.

Training – Human Capital : $20 million

Develop a Customized Job Training package as an investment attraction tool for major projects. This would be similar in concept to the production worker training fund, but the maximum funding would be much higher at approximately $200,000 per company or project. Program would target issues to improve management expertise, general labour skills and worker retention.

Value Added Development Fund: - $20 million

Cost shared funding for projects related to the adoption of new technology, the development of new products, or expansion into new markets. The Fund could be administered through a partner agency such as the Ag and Food Council in order to alleviate concerns of direct to company funding. Assistance for both capital expenditure and operating costs could be considered, based on industry sharing (ie. 50/50 operating; 25/75 capital). Assistance could be repayable based on performance.

Infrastructure: - $15 million

Current support for municipal water/wastewater infrastructure could be enhanced to capture additional elements of required infrastructure to accommodate agri-processing investments. Examples include:

- industrial access roads and improvements
- rail spurs
- power installations and/or utility extensions
- telecommunications/fibre optics

This could increase flexibility to provide a case by case "package" of infrastructure support that would strengthen a company's ability to invest in their own new or expanded facilities.

Access to Capital Programs: - $15 million

Early Stage Financing (seed capital)

- Assistance to bridge between pre-commercialization and early stage commercial development (ie. post AVAC type funding). Start-up costs, working capital through early product and market development Shareholder or proprietor equity is often eroded during early stage (first 6 months of operation). Specialized financing for start up costs through a "soft credit" as some form of a repayable loan facility on favorable terms is needed by emerging processors.
- AFSC delivery required
- Re-evaluation of AFSC lending criteria necessary, or fund loss provisions captured and offset outside of regular lending practices.

Feasibility and Project Planning Studies

Currently available on a limited basis. Opportunity to enrich the program with enhanced funding such as grants up to $100,000 for major initiatives that could involve economic analysis, engineering specs, etc.

Appendix A

Growth Strategies for Key Sectors

Beef

Beef products include primary production, animal by-products and fresh, frozen and chilled beef products. Production efficiency, further processing activity and expanding market will be key to growth of the beef industry.

Current State of Industry

Alberta is the largest beef producing province in Canada. The province leads the nation in cattle and calf inventories, accounting for 6.6 million head or 42 per cent of the national total in 2001.

In 2001, Alberta slaughtered a total of 2.34 million cattle and calves, or 69.4% of the Canadian total. Among Canadian provinces and US states, Alberta currently ranks 5th in total number of slaughtered cattle and calves.

2001 Cash Receipts	$3.9 Bil
2001 Shipments	$3.1 Bil

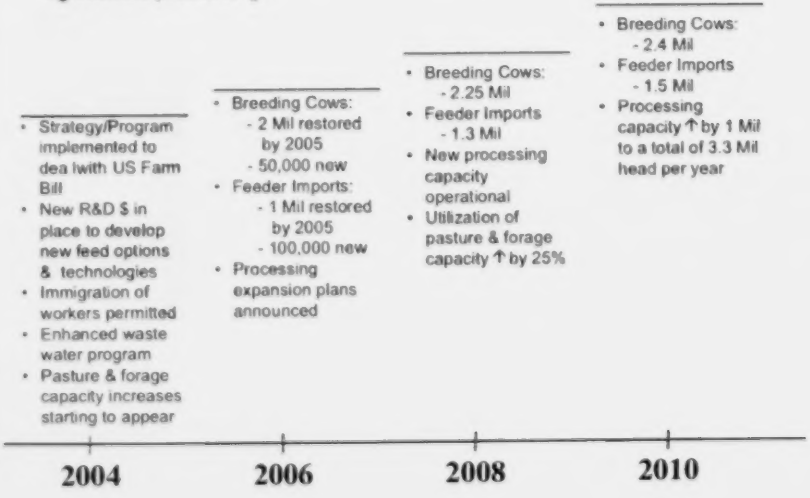
2010 Growth Scenario	***New $***
Primary Production •400,000 additional breeding cows (20% increase) •500,000 additional import feeder cattle into feedlots (50% increase)	$2.1 Bil
Beef Products (Carcass, Animal By-Products, Fresh, Frozen and Chilled Beef Products) • New processing capacity equivalent to an additional 1,000,000 head of cattle ➢ Expansion at existing plants and/ or a new plant	$1.9 Bil
2010 Opportunity (Cash Receipts)	**$6.0 Bil**
2010 Opportunity Shipments)	**$5.0 Bil**

Key Drivers of Growth

- Competitive annual forage and cereal grains for feed
- Continued access to U.S. market to ship cattle and source feeders
- Export market access for processed product
- Shift to case ready meats – driven by economies of scale (labour reduction costs) and food safety issues
- Increased pool of labour (unskilled and skilled)
- Continued availability of water supply

Strategies

- Develop and implement a strategy(ies) to deal with the adverse impact of U.S. Farm Bill
- Increase pasture and forage capacity through better management practices and utilization of available technologies
- Enhance R & D to develop new feed options, environmental practices and processing technologies
- Pursue export market development initiatives for processed products
- Increase processing capacity through investment attraction initiatives
- Increase labour supply through changes to immigration policies
- Fully-utilize and enhance program for wastewater infrastructure for agricultural processing


• Strategy/Program implemented to dea lwith US Farm Bill
• New R&D $ in place to develop new feed options & technologies
• Immigration of workers permitted
• Enhanced waste water program
• Pasture & forage capacity increases starting to appear
2004
• Breeding Cows: - 2 Mil restored by 2005 - 50,000 new
• Feeder Imports: - 1 Mil restored by 2005 - 100,000 new
• Processing expansion plans announced
2006
• Breeding Cows: - 2.25 Mil
• Feeder Imports - 1.3 Mil
• New processing capacity operational
• Utilization of pasture & forage capacity ↑ by 25%
2008
• Breeding Cows: - 2.4 Mil
• Feeder Imports - 1.5 Mil
• Processing capacity ↑ by 1 Mil to a total of 3.3 Mil head per year
2010

Beef

Beef products include primary production, animal by-products and fresh, frozen and chilled beef products. Production efficiency, further processing activity and expanding market will be key to growth of the beef industry.

Current State of Industry

Alberta is the largest beef producing province in Canada. The province leads the nation in cattle and calf inventories, accounting for 6.6 million head or 42 per cent of the national total in 2001.

In 2001, Alberta slaughtered a total of 2.34 million cattle and calves, or 69.4% of the Canadian total. Among Canadian provinces and US states, Alberta currently ranks 5th in total number of slaughtered cattle and calves.

2001 Cash Receipts	$3.9 Bil
2001 Shipments	$3.1 Bil

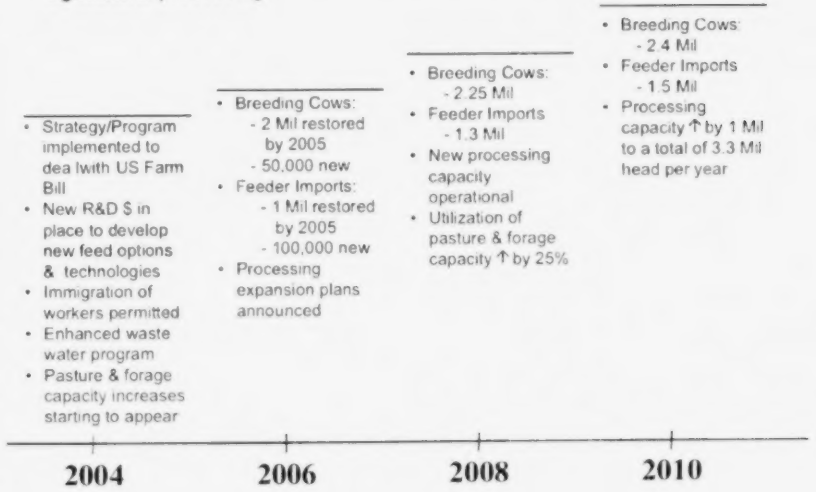
2010 Growth Scenario	***New $***
Primary Production •400,000 additional breeding cows (20% increase) •500,000 additional import feeder cattle into feedlots (50% increase)	$2.1 Bil
Beef Products (Carcass, Animal By-Products, Fresh, Frozen and Chilled Beef Products) • New processing capacity equivalent to an additional 1,000,000 head of cattle - Expansion at existing plants and/ or a new plant	$1.9 Bil
2010 Opportunity (Cash Receipts)	**$6.0 Bil**
2010 Opportunity Shipments)	**$5.0 Bil**

Key Drivers of Growth

- Competitive annual forage and cereal grains for feed
- Continued access to U.S. market to ship cattle and source feeders
- Export market access for processed product
- Shift to case ready meats – driven by economies of scale (labour reduction costs) and food safety issues
- Increased pool of labour (unskilled and skilled)
- Continued availability of water supply

Strategies

- Develop and implement a strategy(ies) to deal with the adverse impact of U.S. Farm Bill
- Increase pasture and forage capacity through better management practices and utilization of available technologies
- Enhance R & D to develop new feed options, environmental practices and processing technologies
- Pursue export market development initiatives for processed products
- Increase processing capacity through investment attraction initiatives
- Increase labour supply through changes to immigration policies
- Fully-utilize and enhance program for wastewater infrastructure for agricultural processing


• Strategy/Program implemented to dea lwith US Farm Bill
• New R&D $ in place to develop new feed options & technologies
• Immigration of workers permitted
• Enhanced waste water program
• Pasture & forage capacity increases starting to appear
• Breeding Cows: - 2 Mil restored by 2005 - 50,000 new
• Feeder Imports: - 1 Mil restored by 2005 - 100,000 new
• Processing expansion plans announced
• Breeding Cows: - 2.25 Mil
• Feeder Imports - 1.3 Mil
• New processing capacity operational
• Utilization of pasture & forage capacity ↑ by 25%
• Breeding Cows: - 2.4 Mil
• Feeder Imports - 1.5 Mil
• Processing capacity ↑ by 1 Mil to a total of 3.3 Mil head per year
2004
2006
2008
2010

Pork

Pork products include primary production, and fresh, frozen and chilled pork products. Continuing global population growth and the increasing world economic growth are driving demand for pork.

Current State of Industry

The total population of hogs (inventory) on farms in Alberta has risen from 0.9 million in 1976 to over 2.0 million in 2001. And, the number of sows in Alberta has increased from 86,500 in 1971 to 200,500 in 2001. A total of 3.6 million pigs were produced for slaughter or export.

In 2001, Alberta slaughtered a total of 2.22 million heads of hogs, or 19.6% of the Canadian total. There are four federally registered pork slaughter and processing plants operating in Alberta.

2001 Cash Receipts	$570 Mil
2001 Shipments	$700 Mil

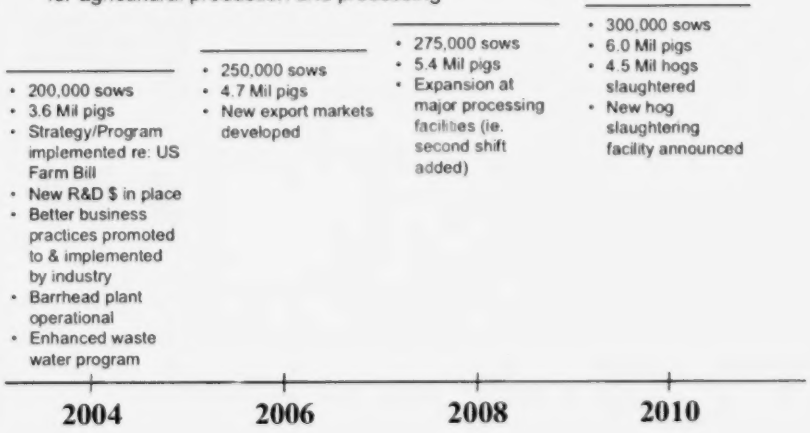
2010 Growth Scenario	***New $***
Primary Production • 300,000 sows (increase of 100,000) • 6.0 Mil pigs (increase of 2.4 Mil)	$430 Mil
Pork Products (Fresh, Frozen and Chilled Pork Products) • Doubling of processing output at existing plants (at present, industry operating at 50% capacity) • New processing capacity	$1.0 Bil
2010 Opportunity t (Cash Receipts)	**$1.0 Bil**
2010 Opportunity (Shipments)	**$1.7 Bil**

Key Drivers of Growth

- Competitive cereal grains for feed
- CFO legislation now in place to deal with siting issues
- Significant investment $ needed in both production and processing
- Continued access to U.S. market and growth in other export markets
- Increased pool of labour (unskilled and skilled)
- Continued availability of water supply

Strategies

- Develop and implement a strategy(ies) to deal with impacts and exploit opportunities of the U.S. Farm Bill
- Facilitate capital investment to establish or expand Alberta's hog production and processing industry
- Encourage a sustainable primary production sector through increased competitiveness, and promotion of financing options, alternative business arrangements and risk management tools
- Enhance R & D to develop new feed options, environmental practices and processing technologies
- Ensure the regulatory framework balances environmental sustainability and growth of the pork industry
- Maintain and enhance access to export markets
- Increase labour supply through changes to labour policies
- Fully-utilize and enhance programs for water and wastewater infrastructure for agricultural production and processing


• 200,000 sows
• 3.6 Mil pigs
• Strategy/Program implemented re: US Farm Bill
• New R&D $ in place
• Better business practices promoted to & implemented by industry
• Barrhead plant operational
• Enhanced waste water program
• 250,000 sows
• 4.7 Mil pigs
• New export markets developed
• 275,000 sows
• 5.4 Mil pigs
• Expansion at major processing facilities (ie. second shift added)
• 300,000 sows
• 6.0 Mil pigs
• 4.5 Mil hogs slaughtered
• New hog slaughtering facility announced
2004
2006
2008
2010

Processed Meats/Ready Meals

Processed meats includes products such as meat snacks, sausages, cooked meats, portion cuts and case ready meats. Ready meals are prepared food items that replace what would otherwise be eaten at home. They are diverse products types that are marketed in frozen, refrigerated and fresh formats. These include entrees, pizzas, sandwiches, soups, meat pies, side dishes, ethnic foods and meal components.

Current State of Industry

Processed Meats	
➢ Federal plants & 250+ provincial plant	$600 Mil
Ready Meals	
➢ 30 small to medium-sized companies	$200 Mil
2001 Shipments	$850 Mil

2010 Growth Scenario	***New Shipment $***
Expansion by Existing Industry	
•Processed Meats	$200 Mil
•Ready Meals	$480 Mil
New Investment	
•Processed Meats	
➢ Bacon & Ham (1 New Plant)	$500 Mil
➢ Case Ready (2)	$300 Mil
➢ Poultry Products (1)	$150 Mil
➢ Other (4)	$200 Mil
eg, Snack, Cooked Meats, Fresh Sausage	
• Ready Meals	
➢Prepared/Frozen Entrees (2)	$100 Mil
➢Natural/Organic (2)	$40 Mil
➢Other (5)	$90 Mil
eg, Diversified, Bowl Meals, Ethnic Meals	
2010 Opportunity	**$3.0 Bil**

Key Drivers of Growth

- Increased supply of slaughter cattle and hogs
- Increased availability of poultry (changes to supply managementsystem)
- Increased pool of labour (unskilled and skilled)
- Attraction of major investor(s)
- Research and development of innovative products
- Continued growth in food service and HMR markets (ie. shift in demand toward convenience, ready to serve foods)
- Growing interest in new tastes and niche marketing (ie. organics, natural, etc.)

Strategies

- Increase exports of processed meats and ready meals
- Increase development of new product and processing technologies
- Increase processing capacity through targeted investment attraction activities and market development initiatives
- Increase business management and production worker skills through targeted training and recruiting programs
- Increase processors' ability to access capital
- Reduce imports of processed meats into Alberta through targetedmarket research and import replacement initiative
- Facilitate increased supply of pork and poultry meat for further processing

2004

- $3 Mil product & mkt development initiative operational
- Policies changed to increase poultry
- Access to capital workshops conducted & 1:1 consulting program in place
- Invest. attraction presentations made
- Case ready (beef) program initiated with 1 major retailer & processor

2006

- Construction began on ham/bacon/ sausage plant
- Increased poultry supply & new processed poultry plant announced
- New case ready plant established for both beef & pork
- Expansion of pork production capability evident to investors
- Fifty new processed meat products test marketed

2008

- Processed meats & ready meals sales of $2 Bil
- $170 Mil in new investment (2002-08)
- Poultry processing plant operational
- New bacon/ham/ sausage plant operational by 2007
- Ready meal production capacity in 10 new facilities

2010

- Processed meat & ready meal sales nearing $3 Bil
- Processing capacity increased by 17 new additional plants
- Mature & globally competitive processed meats & ready meal industry

Non-Food/Industrial Products

Industrial agriculture focuses on the use of bio-based renewable resources (agricultural inputs) in the manufacture of basic chemicals, intermediates, and end products in the non-food sector.

Current State of Industry

Alberta's agri-industrial processing sector is in its early stages of commercialization and expansion. Currently only a handful of companies have been identified within this sector. Products manufactured and exported include fuel alcohol as gasoline oxygenate, gluten, animal blood based meat binder, strawboard and biodegradable lubricants.

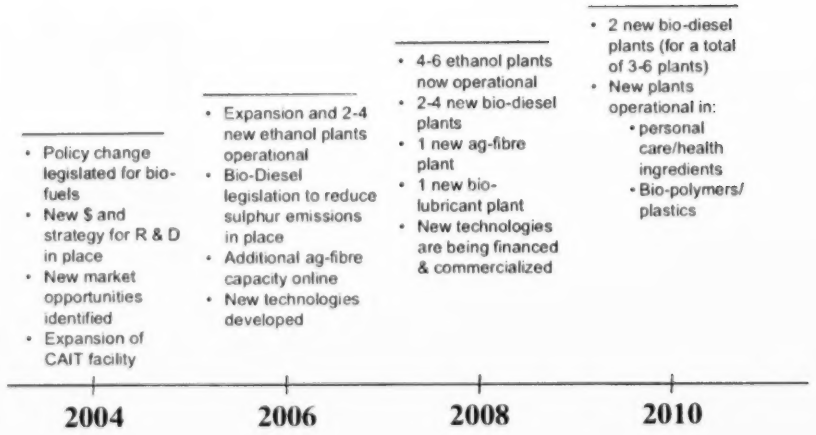
2001 Shipments	**$80 Mil**
2010 Growth Scenario	***New Shipment$***
Bio-Chemicals	
• Bio-Fuels	
➢ Ethanol (expansion & 4-6 new plants)	$300-400 Mil
➢ Bio-Diesel (3-6 plants)	$200-500 Mil
➢ Co-Generation	
• Bio-Lubricants (expansion & 1 new plant)	$40-50 Mil
Bio-Materials	
• Ag-Fibres eg. Strawboard (3 new plants)	$120-150 Mil
• Ag-Fibre Composites	
eg. Molded Building Products	
Special Papers	
Automotive Parts	
Personal Care/Health (Ingredients only)	
• Cosmetics	$10-20 Mil
• Essential Oils	
• Pharma/Vet Products	
• Cosmeceuticals	
• Molecular Farming/Biotech	
Bio-Polymers/Plastics	
• Bio-Medical	Under Assessment
• Bio-Degradable Packaging	
2010 Opportunity	**$800 Mil - $1 Bil**

Key Drivers of Growth

- Continued positive impact of environmental issues on demand
- Research and development of new technologies (eg. energy substitution, new bio-material uses, crop utilization, etc.)
- Policy changes that encourage adoption and usage of ethanol
- Support for early stage development and financing

Strategies

- Investigate policy issues/changes to encourage production and consumption of bio-fuels. Recommendations developed and forwarded to Minister
- Develop an Alberta bio-plastics initiative and cluster network
- Identify and prioritize opportunities in ag-fibres and bio-composites
- Identify ingredient opportunities for personal care and cosmetics sector from agricultural resources
- Identify market opportunities/strategy development for bio-lubricant industry
- Enhance infrastructure for R&D, technology transfer, project commercialization and business/investment development


• Policy change legislated for bio-fuels
• New $ and strategy for R & D in place
• New market opportunities identified
• Expansion of CAIT facility
2004
• Expansion and 2-4 new ethanol plants operational
• Bio-Diesel legislation to reduce sulphur emissions in place
• Additional ag-fibre capacity online
• New technologies developed
2006
• 4-6 ethanol plants now operational
• 2-4 new bio-diesel plants
• 1 new ag-fibre plant
• 1 new bio-lubricant plant
• New technologies are being financed & commercialized
2008
• 2 new bio-diesel plants (for a total of 3-6 plants)
• New plants operational in:
• personal care/health ingredients
• Bio-polymers/ plastics
2010

Functional Foods/Nutraceuticals

Functional Foods and nutraceuticals generally refer to food or food constituents, respectively, that provide health benefits and/or reduce the risk of chronic disease beyond traditional nutrition functions.

Current State of Industry

Specific market data for the Alberta functional food/ nutraceuticals sector has been estimated at approx. $40-50 million. The industry is diverse and manufactures a variety of products such as omega-3 eggs, performance bars, natural health and athletics supplements, and herbals/ botanical products.

2001 Shipments	$50 Mil

2010 Growth Scenario

Crops Dairy Beef	Functional Foods • enhancing natural components (eg. increased CLA in milk/meat) • formulated products (eg. Added fibre in snack foods)
Diversified Livestock Microbial	Nutraceuticals & Natural Health Products • Extracts for supplements, cosmetics and veterinary products

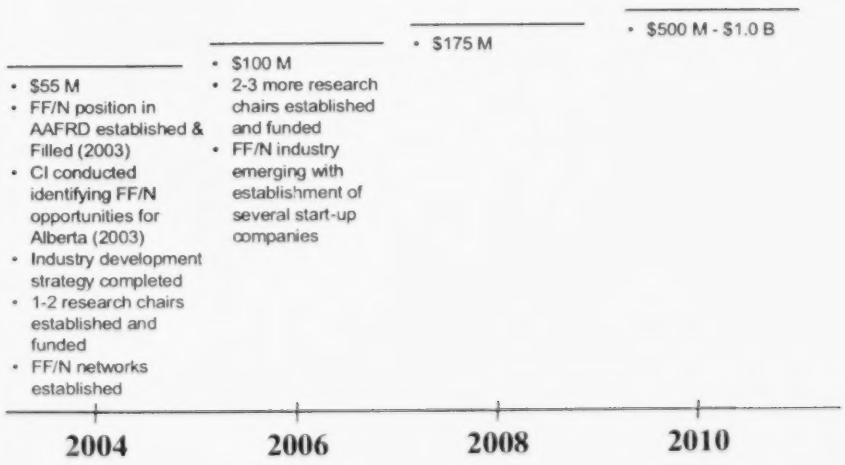
2010 Opportunity	**$500 Mil - 1.0 Bil**

Key Drivers of Growth

- Aging population with increased health concerns and acceptance of alternative medicines
- Export market access (domestic market opportunities will increase with regulatory changes allowing health claims)
- Increased support of research and development (new extraction and fractionation technology)
- Strengthened and linked R & D capacity in crop utilization research and commercialization
- Significant capital investment in pre-commercialization and start-up companies

Strategies

- Establish an Alberta FF/N networks with R & D community, health sector and industry Develop
- Increase R & D capacity through research institutions in Alberta
- Enhance and develop FF/N expertise and knowledge base in Alberta
- Identify new market and product development opportunities for FF/N
- Develop an Alberta FF/N industry development strategy including investment attraction, industry development and research
- Participate in a newly developed pan-western Canadian FF/N network


• $55 M
• FF/N position in AAFRD established & Filled (2003)
• CI conducted identifying FF/N opportunities for Alberta (2003)
• Industry development strategy completed
• 1-2 research chairs established and funded
• FF/N networks established
• $100 M
• 2-3 more research chairs established and funded
• FF/N industry emerging with establishment of several start-up companies
• $175 M
• $500 M - $1.0 B
2004
2006
2008
2010

Appendix B

Other Sector Growth Scenarios

Other Livestock industries

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Poultry & Eggs	$200 Mil	Doubling of chicken production, and new high value industrial egg processing plant.	$300 Mil	• Ability to produce outside of supply management (ie. thru direct production contracts with processors for export markets) • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Dairy	$348 Mil	Incremental growth to meet population increases. Contract milk production for export.	$450-500 Mil	• Resolution of trade issues regarding contract milk production for export • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Diversified Livestock	$20-30 Mil	Aquaculture $10 Mil (2001) → $30 (2010) Bison $3-4 Mil (2001) → $30 (2010) Cervids $14 Mil (2001) → $20 (2010) - (elk, deer, etc.)	$80 Mil	• Reduction in regulatory and trade restrictions • Integrated and coordinated market development initiatives • Access to restricted areas (i.e water) • Processing capacity available • Need to increase producer knowledge/awareness of the costs of processing and marketing
Horses	$80 Mil	Incremental growth only	$100 Mil	• Incremental growth • Continued access to export markets

Other Livestock industries

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Poultry & Eggs	$200 Mil	Doubling of chicken production, and new high value industrial egg processing plant.	$300 Mil	• Ability to produce outside of supply management (ie. thru direct production contracts with processors for export markets) • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Dairy	$348 Mil	Incremental growth to meet population increases. Contract milk production for export.	$450-500 Mil	• Resolution of trade issues regarding contract milk production for export • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Diversified Livestock	$20-30 Mil	Aquaculture $10 Mil (2001) → $30 (2010) Bison $3-4 Mil (2001) → $30 (2010) Cervids $14 Mil (2001) → $20 (2010) - (elk, deer, etc.)	$80 Mil	• Reduction in regulatory and trade restrictions • Integrated and coordinated market development initiatives • Access to restricted areas (i.e water) • Processing capacity available • Need to increase producer knowledge/awareness of the costs of processing and marketing
Horses	$80 Mil	Incremental growth only	$100 Mil	• Incremental growth • Continued access to export markets

Crops/Cereal Productions

	2001	2010 Growth Scenario	2010 Opportunity	Key Drivers
Farm Cash Receipts	$2.27 Bil	No increase in total acreage. Growth through increased yields and shift towards higher value crops.	$4.0 Bil	
Livestock Feed (On-Farm Use of Feed Grain & Forage Crops)	$1.5 Bil	Increased production volumes through efficiency improvements	$2.5 Bil	• Research & Development – eg. low-phytate barley, high protein crops, new/diversified feed crops • Increased livestock numbers

*Please note livestock feed relates to feed grains and forage crops used by producers and not sold at the farm gate.

Sub-sectors within Crops/Cereals

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Wheat	$914 Mil	Incremental growth	$1.0 Bil	• Maintenance of export markets
Canola	$530 Mil	Incremental growth	$800 Mil	• Maintenance of export markets • Increasing processing sector
Specialty Oilseeds	$20 Mil	Production of higher value oils (no acreage increases).	$500 Mil	• Production of higher-value oils for industrial applications • Development of marketing programs to specialty channels
Potatoes	$107 Mil	Increased acreage	$250 Mil	• Expansion of potato processing industry (new plant & doubling of production at existing plants)
Vegetables (other than potato)	$55 Mil	Increased acreage	$200 Mil	• Expansion of value-added processing
Pulses (other than for feed)	$30-40 Mil	Increased acreage, new crop species and increased yields	$100-120 Mil	• Research and development of new varieties/species • Additional processing capacity

Sub-sectors within Crops/Cereals (Cont'd)

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Special Crops (Spices, Herbs, Fruit, etc.)	$40-60 Mil	Increased acreages	$100 Mil	• Trend toward health related products (eg. anti-oxidants, plant-based components, etc.)
Malt Barley	$120 Mil	Increased malt barley acreage with overall increase in barley production	$250 Mil	• Research & development - eg. disease/pest control, low-phytate barley • Access to emerging markets • Expansion in malt processing industry
Crops for Plant-made Pharmaceuticals	$0 Mil	New crop varieties and species	$50-100 Mil	• Aging population with increased health concerns and acceptance of alternative medicines • Increased support of research and development (new extraction and fractionation technology) • Strengthened and linked R & D capacity in crop utilization research and commercialization
Greenhouse	$90 Mil		$200 Mil	• Predictability in energy prices • Development and adoption of more efficient energy systems • Lower production costs through improved technologies (R & D) • Adoption of value chains • Improved marketing channels

Crops/Cereal Productions

	2001	2010 Growth Scenario	2010 Opportunity	Key Drivers
Farm Cash Receipts	$2.27 Bil	No increase in total acreage. Growth through increased yields and shift towards higher value crops.	$4.0 Bil	
Livestock Feed (On-Farm Use of Feed Grain & Forage Crops)	$1.5 Bil	Increased production volumes through efficiency improvements	$2.5 Bil	• Research & Development – eg. low-phytate barley, high protein crops, new/diversified feed crops • Increased livestock numbers

*Please note livestock feed relates to feed grains and forage crops used by producers and not sold at the farm gate.

Sub-sectors within Crops/Cereals

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Wheat	$914 Mil	Incremental growth	$1.0 Bil	• Maintenance of export markets
Canola	$530 Mil	Incremental growth	$800 Mil	• Maintenance of export markets • Increasing processing sector
Specialty Oilseeds	$20 Mil	Production of higher value oils (no acreage increases).	$500 Mil	• Production of higher-value oils for industrial applications • Development of marketing programs to specialty channels
Potatoes	$107 Mil	Increased acreage	$250 Mil	• Expansion of potato processing industry (new plant & doubling of production at existing plants)
Vegetables (other than potato)	$55 Mil	Increased acreage	$200 Mil	• Expansion of value-added processing
Pulses (other than for feed)	$30-40 Mil	Increased acreage, new crop species and increased yields	$100-120 Mil	• Research and development of new varieties/species • Additional processing capacity

Sub-sectors within Crops/Cereals (Cont'd)

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Special Crops (Spices, Herbs, Fruit, etc.)	$40-60 Mil	Increased acreages	$100 Mil	• Trend toward health related products (eg. anti-oxidants, plant-based components, etc.)
Malt Barley	$120 Mil	Increased malt barley acreage with overall increase in barley production	$250 Mil	• Research & development - eg. disease/pest control, low-phytate barley • Access to emerging markets • Expansion in malt processing industry
Crops for Plant-made Pharmaceuticals	$0 Mil	New crop varieties and species	$50-100 Mil	• Aging population with increased health concerns and acceptance of alternative medicines • Increased support of research and development (new extraction and fractionation technology) • Strengthened and linked R & D capacity in crop utilization research and commercialization
Greenhouse	$90 Mil		$200 Mil	• Predictability in energy prices • Development and adoption of more efficient energy systems • Lower production costs through improved technologies (R & D) • Adoption of value chains • Improved marketing channels

Other Value-Added Industries

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Crop Processing				
Grain & Oilseed Processing	$800 Mil	Oilseed - increase in capacity utilization at existing plants	$950 Mil	• Access to export markets (eg. Chinese entry into WTO)
Bakeries & Tortilla Mfg.	$255 Mil	Expansion by existing industry (ie. doubling of frozen dough, increase in specialty products). New frozen dough plant (1) New pasta plant(s) with regional/export mkt. Focus	$650 Mil	• Changes in grain marketing policy (Canadian Wheat Board) • Continued market segmentation and growth of specialty/niche products (enhancement of identity preservation systems) • Strengthened and linked R & D capacity in crops • Development of sustainable crop production systems
Malt	$120 Mil	Expansion at existing plants New plants (2)	$370 Mil	• Access to emerging markets • Changes to grain marketing policy (Canadian Wheat Board) • Quality and disease-free raw materials
Dairy Products	$1.5 Bil	Incremental growth to meet population increases Further value-added products Eg. Expansion at yogurt plant & cheese plant	$2.0 Bil	• Resolution of trade issues regarding contract milk production for export • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Beverages	$727 Mil	New contract (private label) packaging and entry into specialty export markets	$1.0 Bil	• Access to emerging markets • Increase in contract packaging opportunities

Other Value-Added Industries

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Potato	$300 Mil	Expansion by existing plants (doubling production) New potato chip plant New potato salad plant	**$850 Mil**	• Expansion of reliable, high quality potato production • Increased market demand in primary export markets • Competitiveness of Alberta as a processing location vs. other regions
Animal Food Mfg. (Includes Feed)	$597 Mil	Expansion and replacement of older plants with higher capacity plants	**1.0 Bil**	• Expansion of the Hog and poultry production
Vegetable Processing (other than potato)	$30-35 Mil	Fresh-cut/fresh salads, and frozen vegetables	**$100 Mil**	• Development of value chains and/or other innovative business to better coordinate industry activities • Food safety concerns regarding traceability and consistent quality
Pet Food	$60-65 Mil	New plant or doubling by existing plants	**$100-120 Mil**	• Increase in availability of raw materials with livestock expansion • New private label opportunities • Export Replacement potential
Animal By-Products	$200-220 Mil	New hide, blood and offal processing capacity	**$300 Mil**	• Increase in availability of raw materials with livestock expansion • Expansion in processed meat sector • Changes in branding policy • New export market opportunities for non-traditional (offal) products
Specialty Foods	$15-20 Mil	New small to medium-sized plants with national distribution manufacturing gourmet foods, sauces, confectionery, etc.	**$50 Mil**	• Abundant and low-priced supply of sugar (confectionery) • Increasing demand for specialized/niche products

Other Value-Added Industries

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Crop Processing				
Grain & Oilseed Processing	$800 Mil	Oilseed - increase in capacity utilization at existing plants	$950 Mil	• Access to export markets (eg. Chinese entry into WTO)
Bakeries & Tortilla Mfg.	$255 Mil	Expansion by existing industry (ie. doubling of frozen dough, increase in specialty products). New frozen dough plant (1) New pasta plant(s) with regional/export mkt. Focus	$650 Mil	• Changes in grain marketing policy (Canadian Wheat Board) • Continued market segmentation and growth of specialty/niche products (enhancement of identity preservation systems) • Strengthened and linked R & D capacity in crops • Development of sustainable crop production systems
Malt	$120 Mil	Expansion at existing plants New plants (2)	$370 Mil	• Access to emerging markets • Changes to grain marketing policy (Canadian Wheat Board) • Quality and disease-free raw materials
Dairy Products	$1.5 Bil	Incremental growth to meet population increases Further value-added products Eg. Expansion at yogurt plant & cheese plant	$2.0 Bil	• Resolution of trade issues regarding contract milk production for export • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Beverages	$727 Mil	New contract (private label) packaging and entry into specialty export markets	$1.0 Bil	• Access to emerging markets • Increase in contract packaging opportunities

Other Value-Added Industries

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Potato	$300 Mil	Expansion by existing plants (doubling production) New potato chip plant New potato salad plant	$850 Mil	• Expansion of reliable, high quality potato production • Increased market demand in primary export markets • Competitiveness of Alberta as a processing location vs. other regions
Animal Food Mfg. (Includes Feed)	$597 Mil	Expansion and replacement of older plants with higher capacity plants	1.0 Bil	• Expansion of the Hog and poultry production
Vegetable Processing (other than potato)	$30-35 Mil	Fresh-cut/fresh salads, and frozen vegetables	$100 Mil	• Development of value chains and/or other innovative business to better coordinate industry activities • Food safety concerns regarding traceability and consistent quality
Pet Food	$60-65 Mil	New plant or doubling by existing plants	$100-120 Mil	• Increase in availability of raw materials with livestock expansion • New private label opportunities • Export Replacement potential
Animal By-Products	$200-220 Mil	New hide, blood and offal processing capacity	$300 Mil	• Increase in availability of raw materials with livestock expansion • Expansion in processed meat sector • Changes in branding policy • New export market opportunities for non-traditional (offal) products
Specialty Foods	$15-20 Mil	New small to medium-sized plants with national distribution manufacturing gourmet foods, sauces, confectionery, etc.	$50 Mil	• Abundant and low-priced supply of sugar (confectionery) • Increasing demand for specialized/niche products

Other Industries

	2001 Revenues	2010 Growth Scenario	2010 Opportunity	Key Drivers
Farm Direct Marketing	N/A	Expansion of profitable alternative marketing channels for farmers. These include farmers' markets, farm gate sales, farm stores, direct to restaurants, u-pick, etc.	N/A	• Growing consumer interest in establishing direct relationships with those producing and processing their food supply • Harmonization and increased knowledge of regulatory requirements • Developing market focused relationships between meat producers and processors (ie. provincially inspected)
Ag-Tourism	N/A	Agriculture-based tourism attractions, events and retail operations	N/A	• Increased interest in traveling closer to home • Development of signage policy to increase awareness of ag-tourist destinations
Renewable Fibre Industry	$0 Mil	Development of Agri-Foresty industry (ie. woodlots	$300-400 Mil	• New wood fibre source needed as current supplies are finite and diminishing • Ability to use as carbon credits (increasingly more important with Kyoto ratification) • Tax ruling change allowing inter-generational transfer of farm woodlots

Other Industries

	2001 Revenues	2010 Growth Scenario	2010 Opportunity	Key Drivers
Organics	$5 Mil (primary) $5 Mil (value-added)	Increased exports of raw commodities, replacement of imported value-added products, and product line extensions by existing non-organic processors	$10 Mil (primary) $10-15 Mil (value-added)	• Continued increases in consumer demand for organic products • Increasing awareness of processors of the availability of organic inputs and product opportunities. • Entry of larger organic retailers into Canadian market and increased organic offerings by existing retailers
Honey Production	$20 Mil		$60 Mil	• New marketing/distribution strategies (eg. Packing - smaller serving sizes) • Development of export markets • Importation of bees from U.S. (currently not allowed)

Other Industries

	2001 Revenues	2010 Growth Scenario	2010 Opportunity	Key Drivers
Farm Direct Marketing	N/A	Expansion of profitable alternative marketing channels for farmers. These include farmers' markets, farm gate sales, farm stores, direct to restaurants, u-pick, etc.	N/A	• Growing consumer interest in establishing direct relationships with those producing and processing their food supply • Harmonization and increased knowledge of regulatory requirements • Developing market focused relationships between meat producers and processors (ie. provincially inspected)
Ag-Tourism	N/A	Agriculture-based tourism attractions, events and retail operations	N/A	• Increased interest in traveling closer to home • Development of signage policy to increase awareness of ag-tourist destinations
Renewable Fibre Industry	$0 Mil	Development of Agri-Foresty industry (ie. woodlots	$300-400 Mil	• New wood fibre source needed as current supplies are finite and diminishing • Ability to use as carbon credits (increasingly more important with Kyoto ratification) • Tax ruling change allowing inter-generational transfer of farm woodlots

Other Industries

	2001 Revenues	2010 Growth Scenario	2010 Opportunity	Key Drivers
Organics	$5 Mil (primary) $5 Mil (value-added)	Increased exports of raw commodities, replacement of imported value-added products, and product line extensions by existing non-organic processors	$10 Mil (primary) $10-15 Mil (value-added)	• Continued increases in consumer demand for organic products • Increasing awareness of processors of the availability of organic inputs and product opportunities. • Entry of larger organic retailers into Canadian market and increased organic offerings by existing retailers
Honey Production	$20 Mil		$60 Mil	• New marketing/distribution strategies (eg. Packing - smaller serving sizes) • Development of export markets • Importation of bees from U.S. (currently not allowed)

Appendix C

Alberta's Agriculture Research and Innovation Strategic Framework

Alberta

AGRICULTURE, FOOD AND RURAL DEVELOPMENT

INNOVATION AND SCIENCE

Acknowledgements:

Stakeholder Team: Dave Andersen, Joe Boothe, Peter Burnett, Darcy Fitzgerald, Clif Foster, Les Fuller, Keith Jones, Myka Osinchuk, Dick Peter, Robert Rogers, and Neal Oberg

Project Team: Maureen Bolen, Alan Hall, Don Macyk, Brent McEwan, and Freda Molenkamp

Table of Contents

Executive Summary 134

Introduction 137

From the Beginning — A Collaborative Stakeholder Approach 139

Setting Direction + Strategic Investment = Meeting Goals 139

Goals/Strategies/Actions = Outputs & Outcomes 140

Strategic Investment Portfolio For Alberta's R&D System 144

Leadership and Governance 147

Accountability 150

Outcomes 151

Implementation 151

Supporting Documents 151

Alberta's Agriculture Strategic Research and Innovation Framework

". . . action without knowledge . . . knowledge without action." Gwyn Morgan suggests these are two limitations to our future progress.

Time, November 2002

The purpose of this framework is to bridge these two solitudes.

Executive Summary

Alberta is committed to implementing a strategic research and innovation plan that lays the foundation for the province's growth. Commitment and collaborative engagement towards a powerful strategic vision for innovation has already produced tremendous results for the province . . . Albertans have done this before. Research coupled with industry engagement during the last two decades of the 20th century turned the tar sands into a major economic driver for Alberta's 21st century.

Agriculture leaders seeking to create a major new crop for Western Canada summoned courage, scientists, industry and governments whose collective efforts turned rapeseed into a world leading multi-billion dollar canola industry. These are but two examples of how collaborative science, industry and government can create the foundation for new endeavors with broad industry impact. For the 21st century, research and innovation are becoming even more so the engines of our economic, social and environmental well-being.

The Opportunity

The Life Sciences now present an opportunity to strengthen and grow Alberta's major economic sectors including agriculture, health, forestry and energy. Alberta's new Life Sciences Strategy creates a framework for growth of new strengths and development of current industries by:

- Developing leadership in the life sciences
- Increasing research excellence
- Improving the environment for life science businesses
- Training, attracting, and retaining high quality life sciences workers, researchers, and managers
- Engaging the public in productive dialogue on life sciences development

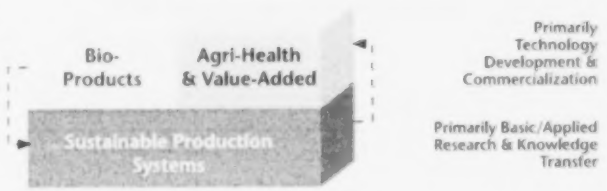
Agriculture is a fundamental element to the emergence of Alberta's Life Sciences sector. Success in developing the agriculture research and innovation system will enhance the success of individual sectors and allow for growth in crosscutting areas such as nutrition and health, bio-products and biomaterials that engage all life sciences sectors.

The current Alberta agriculture economy produced $8.2 billion in primary product sales, and $9.9 billion in value-added product sales* in 2001. The Value-Added Food and Health Products Sector represents an opportunity of $7.6 billion in growth for the province by 2010 and beyond, while Bio-products priorities identify a $2.5 billion opportunity for industry growth driven by opportunities in biomaterials, bioenergy, and bio-industrial chemicals. Together an industry target of $20 billion value-added and $10 billion primary on a sustainable basis is achievable by 2010.

Success in these two growth areas will be built upon a foundation of the solid production base of Alberta's agricultural industry (see Figure 1). This foundation also requires additional research, development, and commercialization support to provide for sustainable growth of a viable production base. Strategic investment in innovation, including applied research and technology commercialization, in these three areas represents a clear opportunity for Alberta. The payoff to these strategic investments will be contingent on a foundation of research and development for sustainable production systems. Business cases will be developed to identify the research and development needs and opportunities in each of the above three areas.

Strategic Innovation

Strategic Innovation Investment: A Portfolio Approach



Investment

The following outcomes (which provide the basis for performance evaluation of the strategy) are attainable in the first five years, as a direct result of the strategic innovation investment:

- Attract $272 million in private investment (see Table 1) to commercialize technologies and products created and enabled by the system
- Through leveraging, utilize $234.5 million in federal and international funding to build on existing and new agencies' capacity in science and innovation
- Attract and establish nationally and internationally recognized scientific leaders in priority life sciences areas
- Attract and train over 300 new highly qualified personnel for Alberta's life sciences research and innovation system (grad students, technicians, knowledge workers, business managers)
- Create 125 products/technologies and 70 new companies utilizing intellectual property generated by the system

* Value added measured as wholesale value of manufactured foods and beverages, year ending March 2002

Alberta's Agriculture Strategic Research and Innovation Framework

". . . action without knowledge . . . knowledge without action." Gwyn Morgan suggests these are two limitations to our future progress.

Time, November 2002

The purpose of this framework is to bridge these two solitudes.

Executive Summary

Alberta is committed to implementing a strategic research and innovation plan that lays the foundation for the province's growth. Commitment and collaborative engagement towards a powerful strategic vision for innovation has already produced tremendous results for the province . . . Albertans have done this before. Research coupled with industry engagement during the last two decades of the 20th century turned the tar sands into a major economic driver for Alberta's 21st century.

Agriculture leaders seeking to create a major new crop for Western Canada summoned courage, scientists, industry and governments whose collective efforts turned rapeseed into a world leading multi-billion dollar canola industry. These are but two examples of how collaborative science, industry and government can create the foundation for new endeavors with broad industry impact. For the 21st century, research and innovation are becoming even more so the engines of our economic, social and environmental well-being.

The Opportunity

The Life Sciences now present an opportunity to strengthen and grow Alberta's major economic sectors including agriculture, health, forestry and energy. Alberta's new Life Sciences Strategy creates a framework for growth of new strengths and development of current industries by:

- Developing leadership in the life sciences
- Increasing research excellence
- Improving the environment for life science businesses
- Training, attracting, and retaining high quality life sciences workers, researchers, and managers
- Engaging the public in productive dialogue on life sciences development

Agriculture is a fundamental element to the emergence of Alberta's Life Sciences sector. Success in developing the agriculture research and innovation system will enhance the success of individual sectors and allow for growth in crosscutting areas such as nutrition and health, bio-products and biomaterials that engage all life sciences sectors.

The current Alberta agriculture economy produced $8.2 billion in primary product sales, and $9.9 billion in value-added product sales* in 2001. The Value-Added Food and Health Products Sector represents an opportunity of $7.6 billion in growth for the province by 2010 and beyond, while Bio-products priorities identify a $2.5 billion opportunity for industry growth driven by opportunities in biomaterials, bioenergy, and bio-industrial chemicals. Together an industry target of $20 billion value-added and $10 billion primary on a sustainable basis is achievable by 2010.

Success in these two growth areas will be built upon a foundation of the solid production base of Alberta's agricultural industry (see Figure 1). This foundation also requires additional research, development, and commercialization support to provide for sustainable growth of a viable production base. Strategic investment in innovation, including applied research and technology commercialization, in these three areas represents a clear opportunity for Alberta. The payoff to these strategic investments will be contingent on a foundation of research and development for sustainable production systems. Business cases will be developed to identify the research and development needs and opportunities in each of the above three areas.

Figure 1 — **Strategic Innovation**

Strategic Innovation Investment: A Portfolio Approach

Investment

The following outcomes (which provide the basis for performance evaluation of the strategy) are attainable in the first five years, as a direct result of the strategic innovation investment:

- Attract $272 million in private investment (see Table 1) to commercialize technologies and products created and enabled by the system
- Through leveraging, utilize $234.5 million in federal and international funding to build on existing and new agencies' capacity in science and innovation
- Attract and establish nationally and internationally recognized scientific leaders in priority life sciences areas
- Attract and train over 300 new highly qualified personnel for Alberta's life sciences research and innovation system (grad students, technicians, knowledge workers, business managers)
- Create 125 products/technologies and 70 new companies utilizing intellectual property generated by the system

* Value added measured as wholesale value of manufactured foods and beverages, year ending March 2002

Table 1 — **Sources and Uses of Funds 2003 – 2008** ($millions)

	Sources of Funds					
Uses of Funds	**Alberta Public**	**Other Funders[10]**	**Federal Public[11]**	**Int'l[12]**	**Private Investment**	**Total**
Senior Scientific Personnel	$30	$15	$30	$10	$10	$95
Program/Support Costs[13]	$50	$15	$50	$10	$10	$135
Equipment	$12.5	$2.5	$12.5			$27.5
Facilities	$40		$37			$77
Knowledge Transfer	$20		$20		$2	$42
Technology Commercialization	$50	$20	$50	$5	$250	$375
Support Services[14]	$10	$2	$10			$22
Total	**$212.5**	**$54.5**	**$209.5**	**$25**	**$272**	**$773.5**

The Goals

Alberta's agriculture strategic research and innovation framework is composed of six goals, which must be achieved with alignment across the research and development continuum and within the life sciences context. The goals are described as follows:

Goal 1: Alberta's Agricultural Research and Innovation System is focused and guided by industry and public needs, Alberta's comparative advantage and market opportunities.

Goal 2: Alberta's Agricultural Research and Innovation System has effective mechanisms to communicate internally and externally.

Goal 3: Alberta's Agricultural Research and Innovation System delivers more products, practices and processes.

Goal 4: Alberta's Agricultural Research and Innovation System attracts private and public investment.

Goal 5: Alberta's Agricultural Research and Innovation System is transparent and accountable.

Goal 6: Alberta's human resource capacity supports R&D, commercialization and innovation activities.

Implementation of the strategy is based on a portfolio investment approach across the innovation continuum, from basic discovery research to successful technology commercialization delivering products to consumers, driving product sales, knowledge transfer, and economic growth.

The guiding principles for the strategic framework are building a critical mass of world-class scientific personnel in disciplines critical to Alberta's unique needs, supporting it with appropriate levels of research program funding, utilizing talents as the engine for innovation, and ensuring discoveries are supported with knowledge transfer, technology commercialization expertise and industry partnerships. Building research excellence with a collaborative spirit, global networks, and links with entrepreneurial skills are the essential ingredients for success.

[10] Includes AHFMR, AIF, AVAC, Industry Development Funds, Producer Groups/Boards/Commissions

[11] Includes NRC, WED, CFI, CIHR, AAFC, NSERC

[12] Includes USDA, NIH, ATO, other international research collaborators

[13] Includes technicians, graduate students, industrial science placements, other research program support costs

[14] Includes communication, competitive intelligence, due diligence and other related costs

The Investment Portfolio

Implementation of the plan will require an incremental Alberta public investment of $212.5 million over five years catalyzing a total of $773.5 million investment for Alberta's Agriculture Research and Innovation System. The total investment portfolio to enable the plan is summarized in Table 2.

Table 2 — **Strategic Research and Innovation Investment Portfolio 2002 – 2008**

Current (2002) Investment/ year ($ millions)	**Strategic Area**	**Future (2008) Investment/ year ($ millions)**
18	Value-Added Food and Health Products	70
5	Bio-Products	60
110	Sustainable Production	140
2	Economics, Marketing and Social Sciences	10
135 (primarily public investment)	**Total**	**280** (public & private investment)

Some catalytic provincial funding investment will be required for new R&D facilities, infrastructure to support companies such as business incubation capacity, and support for building expertise in technology commercialization including management of intellectual property, licensing and contracting skills, technology prospecting outside of Alberta, etc.

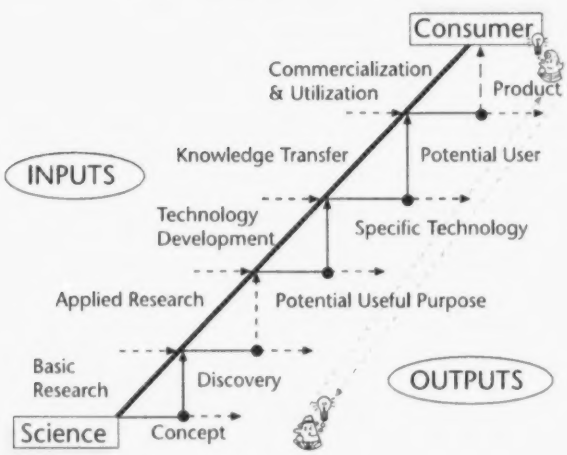
Resources for knowledge and technology transfer will continue to be available for delivery through a number of public and private sources including Alberta Agriculture, Food and Rural Development (AAFRD), the provincial applied research associations, and numerous agri-business product and service providers.

The majority of risk/growth capital for the creation of new companies will be provided through private investment. This level of enhanced private investment must be facilitated via policy changes, support of investment vehicles such as capital access funds, pension funds, investment tax credits and flow through share mechanisms comparable to those currently in place for other Alberta industry sectors (mining, oil and gas exploration) and in other jurisdictions. These policy recommendations are aligned with those forthcoming from the Alberta Science and Research Authority (ASRA) Innovation Task Force, the Joint Alberta Economic Development Authority (AEDA)/ASRA Access to Capital Task Force, and the Alberta Economic Development Value-Added Strategy. An investment portfolio approach will be used to capture short, medium and long-term opportunities. It will be a combination of capturing known economic opportunities and longer term discovery.

Leadership and Governance

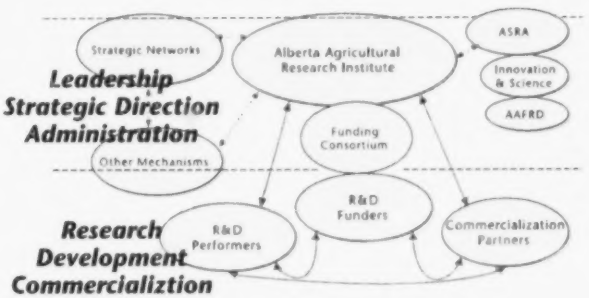
Development of Alberta's Agriculture Strategic Research and Innovation Framework has proceeded in alignment with the Life Sciences Strategy development process and is a cooperative effort of AAFRD, the Alberta Agricultural Research Institute (AARI) and industry partners. Sectoral science plans are being developed by the strategic networks established by AARI. Over 100 Alberta industry, institutional and government leaders have participated in the development of this framework. Funders, Strategic Networks, Research Performance, Technology Transfer, and Technology Commercialization interests, share a motivation with all stakeholders to capture the value and benefit of well-directed scientific endeavors. The development of the Strategic Framework has created new collaborative pathways leading to the emergence of a new governance model. Converting the Framework to a working Business Plan with responsibility and accountability across the continuum (Figure 2) is one of several first implementation steps. The models, the roles and responsibilities, and the participants are further identified in the Governance section.

Figure 2 — **Alberta Agriculture Innovation Continuum**



Under the leadership framework of the new governance model, the Strategic Networks and other mechanisms as required will provide recommendations regarding the strategic direction and priorities. The Networks will include representation from stakeholder groups across the research and innovation continuum and are directly accountable to AARI. AARI and the Funding Consortium, in collaboration with stakeholders, will set the strategic agenda, establish the strategic priorities and ensure that investments are aligned with the strategic direction and facilitate the attraction of extra-provincial and industry resources to the strategic direction. Implementation is based on a portfolio investment approach across the innovation continuum, from basic discovery research to successful technology commercialization, delivering products to consumers, driving product sales and economic growth. Industry leadership, strategic direction, priorities and investment is a prerequisite for process.

Figure 3 — **Provincial Agriculture Research & Innovation System Governance Model**



Throughout the continuum, from research concept through to final consumer benefit, this model will ensure all initiatives balance economic, market, social, and environmental priorities. Achieving success is about capturing growth opportunities through strategic investment to help Alberta develop a leadership position in agriculture research and innovation by 2008 and beyond.

Alberta's Agriculture Strategic Research and Innovation Framework

Science, technology, knowledge and innovation drive the future of a sustainable value-added agriculture industry for Alberta.

Introduction

Advancements in science, innovation and technology commercialization are affecting all industries, including agriculture, as never before. The science, knowledge and information component of Alberta's agriculture sector is a key to its future competitiveness and sustainability. The rate of global advancement and competition is unparalleled in the evolution of our agriculture industry. Leadership is defined by the ability of an economic sector to address its near term needs, while at the same time building a lasting capability of its people and its physical resources. ***Alberta's research and development system is a key component of meeting this leadership challenge.***

As a key natural resource based industry, ***agriculture in Alberta is a growth industry*** focused on value adding and renewability of its products and basic resources. A profound transformation to high value food and non-food products and knowledge application linked to health, energy, information technology (IT), forestry and environment sectors characterize the new direction. Equally challenging are the ongoing efforts aimed at sustaining and enhancing primary production and the basic resources of ***land, water, air and people*** to increase opportunities in Alberta's rural community.

Agriculture's value added sector is approaching $10 billion today and is poised to reach $20 billion or more through the next decade. The challenge to continue building a competitive and sustainable primary sector is vital to positioning agriculture and ***Alberta as a national and global leader***. The outcomes of growth, environmental enhancement and rural development are being pursued simultaneously. The role of research technology and knowledge development and innovation is a key success factor. **Industry leadership, strategic direction and investment are essential ingredients to move forward to that position of leadership. The strategic approach identified in this Framework provides the steps necessary to attaining that position.**

To develop this Strategic Research and Innovation Framework, an open, collaborative and multi-stakeholder consultation process involving hundreds of stakeholders province-wide was conducted. Industry and institutional leaders came together to review numerous opportunities, and have developed an agricultural research and innovation strategy for the benefit of Albertans. The linking of purpose and capacity is the implementation challenge; capturing growth opportunities through strategic investment portfolios moves Alberta to advance its leadership position in agriculture research and innovation.

Vision: *The Alberta Agricultural R&D System is innovative, collaborative, market focused, and stimulates sustainable growth and development for Alberta's benefit.*

Alberta will implement a Strategic Research and Innovation Framework for agriculture that lays the foundation for the industry's growth to 2008 and beyond. This Framework is about "**change**" in Alberta's Agricultural Research and Development System. The current state of the Agricultural R&D System in Alberta has been well analyzed, and it is clear that changes are required to help build and enable the agricultural industry in Alberta to achieve its growth goals in a sustainable manner. At the same time, this Strategic Framework will pursue research and technology excellence for Alberta.

To assist in developing the goals, outcomes, strategies and actions for Alberta's Agriculture Strategic Research and Innovation Framework, an environmental scan of the industry was conducted. Several emerging trends, issues and opportunities for Alberta's agri-industry were identified.

Industry Trends

The total number of census farms in Alberta fell from 59,000 in 1996 to 53,652 in 2001. At the same time the number of Alberta commercial farmers (sales > $100,000/year) declined to about 17,000. Farms are expected to become increasingly bimodal and diverse. About 44 percent of all farm operators are over 50 years old, with fewer younger farmers entering the industry. The industry is experiencing parallel consolidation of the farm supply industry.

The average agri-industry annual gross sales are approximately $9 billion. The value of the agri-processing sector is $10 billion in shipments. The latter employs 22,000 people, and generates an additional $3.4 billion value-added. The ratio of Alberta agri-processing receipts to farm receipts is approximately: 2.66 for irrigated area, 1.05 for the rest of Alberta, and 1.25 for all Alberta, as compared to Oregon at 1.7, Washington State at 2.1 and Ontario at 4.5 plus.

Change Agents

Over the next decade, there are six over-arching trends that will likely continue to drive changes to the structure, conduct and performance of agri-industry in Alberta:

- Globalization of our culture, commerce, and communications is increasingly all pervasive, resulting in accelerated growth and adjustments to change.
- Consumer demand for natural, wholesome, safe, high-quality food products.
- Growing concerns about the sustainability of our ecosystem.
- Increased risk and uncertainty, especially due to climate, political instability, and increasing slow/ineffective institutional response times.
- Accelerated developments in science and technology to try to successfully balance growth with environmental sustainability and quality-of-life objectives.
- Continued but dispersed urbanization/suburbanization.

The Competitive Environment

There are several factors in the global environment that are affecting Alberta's R&D system:

- Traditional factors, e.g., proximity to markets will continue to decline in importance, while technology, social capital and market infrastructure will continue to increase in importance.

- Multinational corporations increasingly have growing impact on private R&D investment patterns in the province.
- Alberta's competitors are generally far ahead of Alberta in changing R&D systems to meet the demands of the new global marketplace and infrastructure and management systems needed for success.
- A key element of a systemic approach to agri-R&D is having strong, world-class research based universities and related institutions that generate new technologies and attract investment and a critical mass of highly skilled, highly motivated people.

Strategic Opportunities

Key market opportunities for Alberta have been identified:

- ***Fully prepared gate-to-plate foods.***
- ***Identity-preserved commodities, functional foods and nutraceuticals.***
- ***Natural health products from biological sources.***
- ***New environmentally friendly cost-reducing production technologies.***
- ***Increased emphasis on sustainable agriculture/multiple-use resource management; resource enhancement and environmental credits.***
- ***Increased custodial responsibility by the rural community for environmental amenities.***
- ***Bio-fuels, bio-diesel, bio-lubricants, and bio-plastics.***
- ***Production of bio-mass for industrial processes and uses, and carbon credits.***
- ***Global competitive technology and knowledge, applicable to primary production efficiency.***

Parallel Growth Strategies

Concurrently, a number of parallel industry growth strategies are being developed across the province to help position Alberta as a global competitor and leader in research excellence and innovation. One of those strategies is ASRA's Integrated Life Science Strategy for Alberta. Life Sciences presents an opportunity to strengthen and sustainably grow major sectors of Alberta's renewable economy, including agriculture, health, forestry and environment. The life sciences framework will enhance the success of these individual sectors and encourage the evolution and growth of crosscutting areas such as nutrition and health, bio-products and biomaterials that engage all life sciences sectors.

Agriculture is a key element of the Alberta Life Sciences Strategy. Within agriculture there is a long history of turning research and innovation into success. **Agriculture's future depends on building toward a successful life sciences sector, and in turn agriculture is key to a successful life sciences sector emerging in Alberta.** Alberta's Agriculture Strategic Research and Innovation Framework intersects with other strategic initiatives in the province in both public and private sectors, namely the Agriculture and Food Growth Strategy, Value-Added Strategy, Alberta Energy Research Institute and Alberta Forestry Research Institute Initiatives, and Universities, Colleges, Provincial Government Departments, and Federal Government Departments.

The Alberta Agriculture Strategic Research and Innovation Framework is designed to intersect with these other growth and R&D-related plans and strategic initiatives to ensure that Alberta's Agricultural R&D System is aligned, has strong leadership and accountability, is well resourced, provides for commercial opportunities and is well recognized locally, nationally, and globally. These initiatives will drive an industry based on sustainable growth, market focused, economically profitable, socially acceptable and responsible stewardship of our resources (water, soil and air).

The benefits of developing such a framework are numerous. Building a strategic shared vision for the Provincial Agricultural R&D System, particularly around the science, technology, knowledge and innovation components, will enable the system to achieve strategic growth targets and outcomes. This vision will position Alberta as a national/global leader in agriculture and related sciences.

Through a new shared vision and collaborative leadership and governance model, stakeholders will be better able to capture the value of R&D, and convert it into commercial products and knowledge utilization in Alberta. The Framework will ensure efforts and resources are focusing on priority areas, and will align and guide investment in the Provincial Agricultural R&D System, along with accountability. It will also address the human resources required for the industry and for R&D. This new framework will serve as a focal point for public policy. The new governance model will result in increased system productivity, efficiency and investment.

New Governance Model

The foundation of the Provincial Agricultural Strategic Research and Innovation Framework is a new governance model that is innovative, collaborative and inclusive. This approach brings the research capacity and funding capacity in Alberta together with strategic network partners, to identify the research priorities and the outcomes necessary to our agricultural industry's future. This model further builds on the existing diversity and strengths of the agricultural research and innovation system by providing a flexible and responsive mechanism for the successful utilization and commercialization of knowledge and products. Due diligence, accountability and targeted outcomes will ensure that the shared vision is attainable.

Achieving success will be about opportunities, outcomes and wealth creation that benefits Albertans and is driven by cost-effective co-investment by government and industry. Achieving success depends on strategic investment to take research discoveries through the continuum of innovation, applied research, technology development, commercialization and market entry, ultimately meeting final consumer/market needs.

Strategic investments will be contingent on a foundation of research and development for sustainable production and processing systems that function within a framework of opportunity for application, commercialization and market entry. Strategic investment of both public and private investors will ensure that Alberta discoveries are commercialized and released by Alberta companies and investors, and the economic value benefits Alberta. To become a global leader, Alberta must become a preferred location for the commercialization of science and technology.

From the Beginning — A Collaborative Stakeholder Approach

Realizing that collaboration is key to building a successful strategy, a collaborative process was used to develop this Research and Innovation Strategy to achieve its success. This Strategy has evolved through an open, collaborative and multi-stakeholder consultation process involving hundreds of stakeholders province-wide.

The Provincial Agricultural R&D System is comprised of numerous stakeholders. These stakeholders include R&D performers, R&D performing organizations, R&D funding organizations, industry, producers and others within and near the agriculture industry. Agriculture is a leading life science sector participant that collaborates and interacts with other sectors and industries, including: Energy, Forestry, Health, Environment and Information Technology. These linkages and interactions are vital aspects in developing a systemic, interactive agricultural R&D system.

Three separate focus groups were brought together in June 2002 to launch the first stage of strategic framework development. The first group included funders and industry representatives, the second included technology transfer, commercialization and industry representatives and the third one included researchers and industry. These same three focus groups were consulted again in the Fall of 2002 at the final stages of the strategic framework development, to review and ensure the strategy and direction were on-track.

Approximately sixty stakeholders provided input to questions regarding the current research, development and commercialization system in Alberta. They also provided their vision of the system and discussed issues and strategies needed to move the industry closer to the desired outcomes. A representative group of stakeholders were identified to assist in developing a draft Strategic Framework for the R&D System. At the same time, three Strategic Networks were responsible for identifying strategic research priorities, which are incorporated into this framework.

The following guiding principles for the Agriculture R&D System were developed for the Framework:

1. **Market driven towards end products that meet the 2010 targets of the sector.**
2. **Focused on fostering research, development and commercialization in Alberta.**
3. **Collaborative outcomes to provide sustainable environmental, social and economic benefits to Albertans.**
4. **Optimizing use of Alberta's R&D resources.**
5. **Future-focused and builds on Alberta's strengths and comparative advantages.**
6. **Encourage collaboration across geographic, sectoral, institutional and disciplinary boundaries.**

Setting Direction + Strategic Investment = Meeting Goals

Three market priority areas for strategic investment are the core of the Agriculture Strategic Research and Innovation Framework. The three market priority areas include: agri-health and value added products, bio-products and sustainable production systems. These market priorities have the potential to create new industries propelling Albertans' economic and social well-being in the future.

The majority of investment in sustainable production systems will support basic and applied research, while the investments in the agri-health and value-added products and bio-products sectors will be weighted towards product and technology development, knowledge transfer and commercialization. This Strategic Research and Innovation Framework serves as a framework for all stakeholders whose individual plans will help create the outcomes identified. Implementation will occur among and through all stakeholders, driven by the goals, strategies and outcomes of this framework.

The implementation of the Agriculture Strategic Research and Innovation Framework, and as a direct result of the strategic investment, the following outcomes are attainable:

- **Attract $272 million in private investment.**
- **Leverage $234.5 million in federal and international funding.**
- **Attract and establish nationally and internationally recognized scientific leaders.**
- **Attract and train over 300 new highly qualified personnel.**
- **Create/attract new companies.**

Goals/Strategies/Actions = Outputs + Outcomes

Alberta's Agriculture Strategic Research and Innovation Framework is comprised of six goals, which must be achieved with alignment across the research and development continuum and within the life sciences context. Specific strategies and outputs support achievement of these six goals. A number of actions have been proposed through stakeholder consultations and are included to support the strategies and goals. These actions will require further discussion, review and analysis, and revisions to build the Implementation Plan for this Framework. The six goals focus on alignment, communication, commercialization, investment, accountability and leadership, and human resources.

Goal 1: Alberta's Agricultural Research and Innovation System is focused and guided by industry and public needs, Alberta's comparative advantage and market opportunities

Goal 2: Alberta's Agricultural Research and Innovation System has effective mechanisms to communicate internally and externally

Goal 3: Alberta's Agricultural Research and Innovation System delivers more products, practices and processes

Goal 4: Alberta's Agricultural Research and Innovation System attracts private and public investment

Goal 5: Alberta's Agricultural Research and Innovation System is transparent and accountable

Goal 6: Alberta's human resource capacity supports R&D, commercialization and innovation activities

Goal 1: Alberta's Agricultural Research and Innovation System is focused and guided by industry and public needs, Alberta's comparative advantage and market opportunities

Outputs

- R&D priorities are aligned to industry and public needs.
- Strategic priorities provide clear direction for building resources, capacity, and investment.

Strategy	Proposed Actions
1. Develop a competitive intelligence (CI) center for Alberta's R&D system.	Develop an R&D Intranet knowledge management (KM) site to strengthen the R&D system's efficiency and capability in harvesting, storing, managing, and sharing information.
	Develop a skills database for use by Alberta's R&D system participants.
	Provide CI and KM training opportunities to R&D system participants.
2. Have a process in place to establish and renew priorities.	Implement an ongoing system for collecting information and knowledge concerning Alberta's comparative advantage, market, and public needs to be utilized in the R&D system decision-making process.
	Build a mechanism to annually review and set priorities through a transparent and inclusive process.
3. Ensure R&D resource allocations are supported by strong due diligence processes.	Develop due diligence processes that support sound funding and resource decisions that are consistent with the strategic framework.
	Develop and expand the R&D funders round table.
	Develop an R&D research performers round table.
	Align the R&D system with the Alberta's technology transfer/ innovation/commercialization capacity.

Goal 2: Alberta's Agricultural Research and Innovation System has effective mechanisms to communicate internally and externally

Outputs

- R&D system participants are well informed and aware.
- More informed public, stakeholders, shareholders, research performers, and investors.
- Engaged and knowledgeable stakeholders.
- Enhanced public trust in R&D.

Strategy	Proposed Actions
1. Increase awareness of the Agricultural R&D system research successes and activities.	Regularly (quarterly) publish Alberta R&D success stories using a variety of communication methods.
	Showcase Alberta R&D locally, nationally, and internationally.
	Recognize and meaningfully reward research excellence.
	Plan annual stakeholder 'bear pit sessions' to share success, share emerging priorities, and identify gaps.
	Develop public relations plan including media relations.
2. Create mechanisms to build industry & science partnerships/ alliances for investment, communication, and efficiency.	Facilitate think tanks for all stakeholders in the R&D system to encourage innovative thinking and identify technology and market opportunities.
	Conduct research conferences and discussion forums to showcase research, development, and commercialization successes.
	Utilize a network approach to facilitate discussion and decision-making among stakeholders.

Goal 3: Alberta's Agricultural Research and Innovation System delivers more products, practices and processes

Outputs

- The R&D system collaborates and/or aligns to produce more impactful commercial endeavors.
- Commercial partners actively seeking benefit from Alberta's research performing capacity.
- More opportunities are seized, new products and processes are developed at a faster pace.
- R&D is a larger economic engine for the Alberta economy.

Strategy	Proposed Actions
1. An aggressive commercialization sector delivers technologies from within Alberta and beyond.	Utilize competitive intelligence to "harvest the world" for technology opportunities.
	Review research already undertaken in Alberta to determine commercialization potential.
	Develop and implement a consortia approach to funding development, technology transfer, pre-commercialization and commercialization opportunities.
	Provide opportunities for global networking among scientists and technology specialists.
	Link to other commercialization initiatives (i.e. ASRA's Innovation Task Force) — key initiatives include: • New business start-ups • Strategic technology development and application • Financing • Manufacturing knowledge and technology transfer • Teaming and collaboration
2. Align infrastructure capacity with strategic priorities and future R&D needs.	Carry out gap analysis of current infrastructure and prioritize direction.
	Optimize use of present resources.
	Create new business incubators adjacent to R&D facilities.
	Create analytical and business capacities within incubator facilities.

Goal 4: Alberta's Agricultural Research and Innovation System attracts private and public investment

Outputs

- Increase in start-up companies.
- Alberta's R&D system will attract substantial private and public investment each year.
- Established commercial enterprises increase internal science and technology development capacity.

Strategy	Proposed Actions
1. Build high quality scientific investment opportunities.	Funders and research performers work together to create high quality scientific program submissions aligned with strategic priorities.
	Examine proposals through a robust scientific and industry peer review process.
	Engage industry in priority setting to ensure submissions meet industry and public needs and reflects profitability focus.
	Develop mechanisms to assess return on investment (i.e. whole cost accounting).
	Provide ongoing monitoring and analysis of Alberta's R&D competitiveness in investment attraction relative to other jurisdictions (i.e. CI functions).
	Develop competitive incentives for investment and commercialization, e.g. research tax credits, flow-through shares.
	Address public policy issues, e.g., endowment fund, intellectual property and regulatory barriers.
	Assist researchers and small businesses in identifying and attracting industry funding and support.
2. Improve access to capital for pre-commercialization and early development R&D activities.	Link to other investment initiatives (eg. Joint ACDA/ASRA Access to Capital Task Force, AAFRD Investment Attraction Group).
3. Improve Alberta's ability to access key federal resources.	Investigate opportunities in potential partnerships.
4. Increase commercial investment in Alberta new products, practices, and processes.	Showcase Alberta's R&D performing capacity to potential commercialization partners.
	Link commercialization priorities and opportunities with research priorities.
	Resolve receptor capacity issues.

Goal 5: Alberta's Agricultural Research and Innovation System is transparent and accountable

Outputs

- Stakeholders support a leadership framework resulting in increased system productivity, efficiency, and investment clearly aligned with priority areas of focus.
- Collaboration and partnerships create new and enabling capacity.

Strategy	Proposed Actions
1. Establish a leadership model that meets the needs of the R&D system.	Develop a suitable governance model for Alberta's R&D system.
	Design an accountability system with clear agreed upon measures that are regularly updated and monitored; and design due diligence processes that support sound funding and resource decisions.
	Build and facilitate partnered funding mechanisms that support the funding consortium and aligns system with the strategic priorities.
	Create and annually review and update a Strategic Agricultural R&D Business Plan in consultation with stakeholders.
	ASRA to establish a clear and uniform policy for Intellectual Property management across Alberta's R&D system.
2. Facilitate the development of collaborative partnerships that maximize efficiency and effectiveness.	Develop new reward and recognition systems that encourage collaboration, partnerships, and networking.
	Develop and engage R&D stakeholders in a networking/ leadership program.

Goal 6: Alberta's human resource capacity supports R&D, commercialization and innovation activities

Outputs

- Human resources aligned with strategic priorities and future needs.
- New highly qualified personnel (scientists, technicians, commercialization, and innovation staff) are recruited and working in Alberta's R&D system.

Strategy	Proposed Actions
1. Align HR capacity with strategic priorities and future agricultural R&D needs.	Conduct a needs assessment on human resource requirements and determine where there are gaps in system (align with strategic priorities).
	Actively fill HR gaps in Alberta's R&D system in alignment with strategic priorities.
	Assess human resource requirements on a biannual basis.
2. Attract and retain scientific and business capacity in key strategic areas.	Design innovative recruitment programs to attract new personnel including scientists, technologists, etc. to Alberta.
	Establish critical mass that will drive scientific excellence in key strategic areas.
	Create a recruitment package with support for infrastructure, operational and human support to attract personnel in key strategic areas.
	Provide opportunities for secondment in outside jurisdictions across the R&D system (inter-institutional, funders, performers, stakeholders, research/technology/ commercialization specialists).
	Implement programs for leadership, networking, commercialization, innovation, and team building competencies.
	Increase funding opportunities for training in technology transfer and commercialization activities.
	Establish attractive IP policies for researchers.
3. Expand training opportunities for technicians and support staff	Increase university and college capacity to increase the number of technical staff, undergraduate and graduate students.
	Develop and deliver industry training programs.
	Implement training programs to address key research, technology, and industrial competencies.

Strategic Investment Portfolio for Alberta's R&D System

Current investment (2002) in agricultural R&D totals $135 million per year from all sources. With this Strategic Framework and anticipated investment, by 2008 the yearly investment in agricultural R&D will be increased and sustained at $280 million per year. The implementation of this Strategic Framework will require an Alberta public investment of a total of $212.5 million from now until 2008, to achieve a sustained $280 million per year by 2008.

Table 3 — **Sources and Uses of Funds 2003 – 2008** ($ Millions)

	Sources of Funds					
Uses of Funds	Alberta Public	Other Funders[15]	Federal Public[16]	Int'l[17]	Private Investment	**Total**
Senior Scientific Personnel	$30	$15	$30	$10	$10	**$95**
Program/Support Costs[18]	$50	$15	$50	$10	$10	**$135**
Equipment	$12.5	$2.5	$12.5			**$27.5**
Facilities	$40		$37			**$77**
Knowledge Transfer	$20		$20		$2	**$42**
Technology Commercialization	$50	$20	$50	$5	$250	**$375**
Support Services[19]	$10	$2	$10			**$22**
Total	**$212.5**	**$54.5**	**$209.5**	**$25**	**$272**	**$773.5**

The incremental Alberta public investment of $212.5 million to 2008 is the catalyst required to create a portfolio of $773.5 million for new initiatives in Alberta's Agriculture Research and Innovation System. This will be linked to national and international research and industry globally. The total resource portfolio to enable the framework is summarized above in Table 3. It is anticipated that this framework will enable a 1/3:1/3:1/3 split between Alberta public dollars, federal dollars and private industry dollars for agricultural research and innovation. R&D is a critical component of achieving the industry's future growth target of $20 billion value-added and $10 billion primary on a sustainable basis. This strategic framework ensures the industry's ability to capture opportunities that will help achieve these growth goals.

Early stage investment will include facility capacity and new research science capability in disciplines vital to meeting the strategic investment priorities. Balancing investments in basic and applied research science capacity with knowledge transfer and technology commercialization will be required early into the period for which the Framework is designed, to meet the investment attraction required from industry. **Some catalytic provincial funding investment will be required to support new company creation infrastructure such as business incubation capacity, and support for building expertise in technology commercialization including management of intellectual property, licensing and contracting skills, technology prospecting outside Alberta, etc.** It is anticipated that resources for knowledge and technology transfer will continue to be available for delivery through AAFRD, the provincial applied research associations, agri-business, commodity groups and private organizations. **The majority of risk/growth capital for the creation of new companies will be provided through private investment.**

Table 4 — **Total Amount of Investment In Agricultural R&D**

Total Amount of Investment In Agricultural R&D from 2002 to 2008 ($ millions)						
	Alberta Public	Other Funders[20]	Federal Public[21]	Int'l[22]	Private Investment	Total Portfolio Investment
At Current Investment Level	293.5	95	200.5	5	83.5	677.5
Proposed Additional Investment Level	212.5	54.5	209.5	25	272	$773.5
Total Portfolio Investment	**$506**	**$149.5**	**$410**	**$30**	**$355.5**	**$1451**

[15] Includes AHFMR, AIF, AVAC, Industry Development Funds, Producer Groups/Boards/Commissions

[16] Includes NRC, WED, CFI, CIHR, AAFC, NSERC

[17] Includes USDA, NIH, ATO, other international research funders

[18] Includes food safety issues including preservation, handling, processing technologies, identity preservation, rapid analysis and monitoring

[19] Includes communication, competitive intelligence, due diligence and other related costs

[20] Includes AHFMR, AIF, AVAC, Industry Development Funds, Producer Groups/Boards/Commissions

[21] Includes NRC, WED, CFI, CIHR, AAFC, NSERC

[22] Includes USDA, NIH, ATO, other international research funders

Through the collaborative stakeholder approach, combined with information from the environmental scan and other knowledge, key strategic opportunities and initiatives have been identified as priorities for strategic investment over the next few years.

Table 5 — **Strategic Investment Portfolio**

2002 $ million/year	Strategic Area	2008 $ million/year
$ 18	**Value-Added Food and Health Products**[23]	$ 70
	• crop-based food, food ingredient and fermentation products • agri-based health, therapeutic and wellness products • value enhanced fresh and processed meats and co-products	
$ 5	**Bio-Products**	$ 60
	• bio-materials (bio-polymers, fibres and bio-composites) • bio-energy/fuels, co-generation and byproducts utilization • bio-chemicals (lubricants, cosmetics, resins, and Industrial chemicals)	
$ 110	**Sustainable Production Systems**	$ 140
	Interaction of Agriculture With Water, Soil and Air Resources • enhanced water, soil and air management (systemic approach) • climate change and amelioration technologies	
	Crop Opportunities • crop and crop product value-added and diversification • strategies for disease and pest management • nutrient efficient cropping systems • food safety	
	Livestock Opportunities • meat quality influenced by genetics and production management • animal welfare and care • animal health-strategies for prevention and control • animal genetics and proteomics applications for animal health and meat quality • food safety	
$ 2	**Economics, Marketing & Social Sciences**	$ 10
	• Marketing, policy, regulation • Competitive intelligence • Consumer behavior, rural enhancement and development	
$135	**Total Investment**	**$280**

[23] Includes food safety issues including preservation, handling, processing technologies, identity preservation, rapid analysis and monitoring

The majority of investment in sustainable production systems will support basic and applied research, while the investments in the agri-health, value-added and bio-products sectors will be weighted towards technology development, knowledge transfer and commercialization. To enable the growth of this research capacity, investments in facilities and equipment totaling $52.5 million (see Table 3) will be required in the first two years of the strategy implementation. There is opportunity to invest in current research facility expansion across the province including the universities, colleges and the Alberta Research Council.

Several platform technologies will support the future development of the strategic investment portfolio opportunities identified for agriculture. These platform technologies (proteomics, bioinfomatics, genomics, nanotechnology) for developing leading edge science, are largely supported by the Life Sciences Strategy and the continued ASRA investment and support. These platform technologies and opportunities span the entire Life Sciences Industry, of which agriculture is a key component.

Enhanced private investment must be publicly-facilitated via policy changes including support of investment vehicles such as capital access funds, pension funds, investment tax credits and flow through share mechanisms comparable to those currently in place for other Alberta industry sectors (mining, oil and gas exploration) and other jurisdictions. These policy recommendations are aligned with those forthcoming from the ASRA Innovation Task Force and the Joint AEDA/ASRA Access to Capital Task Force.

The strategy of regularly collecting and analyzing information and knowledge concerning Alberta's comparative advantage, market opportunities and consumer needs through the Strategic Networks will provide the governance system with the necessary knowledge and information to achieve maximum private and public benefits. Achieving success is about capturing growth opportunities through strategic investment portfolios to help Alberta develop a leadership position in agriculture research and innovation by 2008 and beyond.

Strategic Networks and Priorities

Figure 4 — Strategic Innovation Investment

Value-Added Health and Food Products

Several opportunities have been identified in the value-added health and food products areas. Health and wellness products using bioactives obtained from agricultural sources represent a significant opportunity for Alberta. Aging demographics and consumers taking responsibility for their health are fueling nutraceutical, functional food, personal care, alternative medicine and pharmaceutical markets. New products are emerging containing dietary fibres, peptides, antioxidants, oliogosaccharides, polyunsaturated fatty acids, just to name a few. The possibilities for proprietary blockbuster products are attracting global food, pharmaceutical, chemical and venture capital firms' interests. Further development work for R&D is required to capture this opportunity.

Alberta's advantages in crop production also provide the foundation for establishing a new $2-3 billion world scale extraction, conversion, fermentation, and proprietary trait industrial sector. The large global food ingredient and fermentation markets are expanding, with innovation leading to new and enhanced consumer and industrial products. Wheat, coarse grains, oilseeds and pulses currently exported are excellent feedstocks for the extraction and conversion of starch, protein, oil, fibre and cellulose into valuable ingredients and derivatives with distinctive functionalities and nutritional benefits and uses in food, feed, and pet foods, as well as industrial feedstock for further manufacturing.

Priority investments in meat R&D can build on existing Alberta R&D capacity and competitive strength in livestock production, meat quality, and food safety. Increasing the value, volume and share of Alberta's meat products in domestic and export markets is seen as key to the industry. Value-enhanced products will enable Alberta food processors to reach discriminating domestic and international customers with a variety of new, appealing, nutritious and safe meat products.

Food safety continues to be an issue of high importance. Leading edge developments, products and processes in preservation, handling, processing, identify preservation, rapid analysis and monitoring are required to ensure that Alberta continues to be a competitive player in the global marketplace.

Bio-Products

Bio-products offer Alberta a major opportunity to meet global market demands for new materials, products and technologies based on our resources. Bio-materials include bio-composites (building products, agri-fibres) and bio-polymers (bio-plastics). Novel applications of science and technology can create new value-added ways to sustainably use Alberta's agriculture and forestry products. This priority area provides for significant regionally-based growth from Alberta strengths (crops and forest resources), industry, research infrastructure and a critical mass of innovative researchers.

Bio-energy is an opportunity to meet energy and transport industry market demands for alternative fuels and clean renewable sources of energy and potentially beneficial properties including lubricants, oxygenation and hydrogen content enhancement. Bio-energy includes bio-fuels and co-generation (including bio-gas). Through science and technology oriented to utilize Alberta agriculture and forestry commodities and waste streams, new energy sources can be developed. Advanced technologies in cellulosics could convert a costly byproduct to a valuable energy and fibre input. Globally, energy supplies are limited, population demands are increasing, society is seeking new processes for reduced emissions, and policies are encouraging these industrial developments. Currently, the Alberta bio-energy industry is limited, but interest is emerging. Alberta has significant resources to 'tackle' this opportunity, and expansion in this

The majority of investment in sustainable production systems will support basic and applied research, while the investments in the agri-health, value-added and bio-products sectors will be weighted towards technology development, knowledge transfer and commercialization. To enable the growth of this research capacity, investments in facilities and equipment totaling $52.5 million (see Table 3) will be required in the first two years of the strategy implementation. There is opportunity to invest in current research facility expansion across the province including the universities, colleges and the Alberta Research Council.

Several platform technologies will support the future development of the strategic investment portfolio opportunities identified for agriculture. These platform technologies (proteomics, bioinfomatics, genomics, nanotechnology) for developing leading edge science, are largely supported by the Life Sciences Strategy and the continued ASRA investment and support. These platform technologies and opportunities span the entire Life Sciences Industry, of which agriculture is a key component.

Enhanced private investment must be publicly-facilitated via policy changes including support of investment vehicles such as capital access funds, pension funds, investment tax credits and flow through share mechanisms comparable to those currently in place for other Alberta industry sectors (mining, oil and gas exploration) and other jurisdictions. These policy recommendations are aligned with those forthcoming from the ASRA Innovation Task Force and the Joint AEDA/ASRA Access to Capital Task Force.

The strategy of regularly collecting and analyzing information and knowledge concerning Alberta's comparative advantage, market opportunities and consumer needs through the Strategic Networks will provide the governance system with the necessary knowledge and information to achieve maximum private and public benefits. Achieving success is about capturing growth opportunities through strategic investment portfolios to help Alberta develop a leadership position in agriculture research and innovation by 2008 and beyond.

Strategic Networks and Priorities

Figure 4 — **Strategic Innovation Investment**

Value-Added Health and Food Products

Several opportunities have been identified in the value-added health and food products areas. Health and wellness products using bioactives obtained from agricultural sources represent a significant opportunity for Alberta. Aging demographics and consumers taking responsibility for their health are fueling nutraceutical, functional food, personal care, alternative medicine and pharmaceutical markets. New products are emerging containing dietary fibres, peptides, antioxidants, oliogosaccharides, polyunsaturated fatty acids, just to name a few. The possibilities for proprietary blockbuster products are attracting global food, pharmaceutical, chemical and venture capital firms' interests. Further development work for R&D is required to capture this opportunity.

Alberta's advantages in crop production also provide the foundation for establishing a new $2-3 billion world scale extraction, conversion, fermentation, and proprietary trait industrial sector. The large global food ingredient and fermentation markets are expanding, with innovation leading to new and enhanced consumer and industrial products. Wheat, coarse grains, oilseeds and pulses currently exported are excellent feedstocks for the extraction and conversion of starch, protein, oil, fibre and cellulose into valuable ingredients and derivatives with distinctive functionalities and nutritional benefits and uses in food, feed, and pet foods, as well as industrial feedstock for further manufacturing.

Priority investments in meat R&D can build on existing Alberta R&D capacity and competitive strength in livestock production, meat quality, and food safety. Increasing the value, volume and share of Alberta's meat products in domestic and export markets is seen as key to the industry. Value-enhanced products will enable Alberta food processors to reach discriminating domestic and international customers with a variety of new, appealing, nutritious and safe meat products.

Food safety continues to be an issue of high importance. Leading edge developments, products and processes in preservation, handling, processing, identify preservation, rapid analysis and monitoring are required to ensure that Alberta continues to be a competitive player in the global marketplace.

Bio-Products

Bio-products offer Alberta a major opportunity to meet global market demands for new materials, products and technologies based on our resources. Bio-materials include bio-composites (building products, agri-fibres) and bio-polymers (bio-plastics). Novel applications of science and technology can create new value-added ways to sustainably use Alberta's agriculture and forestry products. This priority area provides for significant regionally-based growth from Alberta strengths (crops and forest resources), industry, research infrastructure and a critical mass of innovative researchers.

Bio-energy is an opportunity to meet energy and transport industry market demands for alternative fuels and clean renewable sources of energy and potentially beneficial properties including lubricants, oxygenation and hydrogen content enhancement. Bio-energy includes bio-fuels and co-generation (including bio-gas). Through science and technology oriented to utilize Alberta agriculture and forestry commodities and waste streams, new energy sources can be developed. Advanced technologies in cellulosics could convert a costly byproduct to a valuable energy and fibre input. Globally, energy supplies are limited, population demands are increasing, society is seeking new processes for reduced emissions, and policies are encouraging these industrial developments. Currently, the Alberta bio-energy industry is limited, but interest is emerging. Alberta has significant resources to 'tackle' this opportunity, and expansion in this

area will lead to a significant growth in the utilization of Alberta agriculture and forestry products.

Bio-industrial chemicals offer new ways of supplying naturally derived chemical products for global industrial markets. Bio-industrial chemicals include chemical feedstocks (platform chemicals) bio-lubricants, bio-cosmetics and resins. With novel applications of science and technology, new ways to utilize Alberta agriculture and food products can be discovered. Globally, consumers are seeking alternative bio-degradable products, and policies and programs are encouraging green chemicals and products. Bio-industrial chemicals provide a 'bridging' opportunity to build capacity in technology development and commercialization efforts through which all can jointly act. This priority area enables Alberta's diverse and globally competitive chemical sector to source new technologies and meet global industrial companies' needs in seeking innovative products. It also provides the agricultural sector with new large volume utilization of crops and waste residuals for high-valued products.

Sustainable Production Systems

The production and sales of raw commodities from crops and livestock account for almost $9 billion to Alberta's economy. Arising from this production capacity is a diverse range of products specific for their quality, structural and/or functional properties. There are opportunities for the creation of new marketable traits and specific differentiated products from crops and livestock products. The development of genetics and management practices will produce a diversity of specific traits to meet market and value-chain needs. This priority provides the foundation to meet the needs to support the bio-products and value-added health and food product priority areas.

Nutrient efficient cropping systems are a priority for sustainable production. Developing alternative methods for long-term nutrient balance management is key to increasing the efficiency in crop and livestock systems. Development of specific traits designed to increase efficiency in plants' and animals' utilization will be a priority. There is potential to enhance the economic return and reduce wastes through a more efficient conversion of inputs to economic product, capturing and holding more components in the system (eg. carbon credits) and reducing their movement beyond the agricultural system (environmental risk). Water supplies are under increasing demand, and in many years decreasing supply. This availability of water may be a limiting factor to growth. Increased efficiency in water management and use, combined with advancements in crop genetics and other technologies that will reduce the amount of water required for production to help overcome these challenges.

Livestock genomics is an area of importance for Alberta as it provides the platforms upon which improvements in meat quality and nutritional properties in meat and meat products can be achieved.

Animal health strategies are key to economic returns and market expectations for safe and healthy food. Continuous work in disease management and prevention will be a priority. Examples include having a strategy for large disease outbreaks (i.e. Foot and Mouth disease). Leading technologies and discoveries leading to new vaccines, diagnostics and management for serious animal health issues.

Animal welfare and care are an important component of the system, and setting standards of practice based on science for factors such as housing facilities, feeding pens, handling facilities, etc. are important. These standards are designed to minimize the stress to the animal and enhance their well-being and production.

Crop disease and pest management are key factors facing farm managers. Utilizing leading edge tools and methodologies to develop a systemic approach to dealing with diseases and pests will be a key component for growth. The priorities will be on diseases and pests that are significant threats to the agriculture industry, and that affects crops of significant value to the 'value-chains' in the system. For example, sclerotinia in canola, fusarium head blight in malt and feed barley, and wheat, late blight in potatoes and potato beetle infestations, and diseases such as ascochyta in chickpeas and other specialty crops.

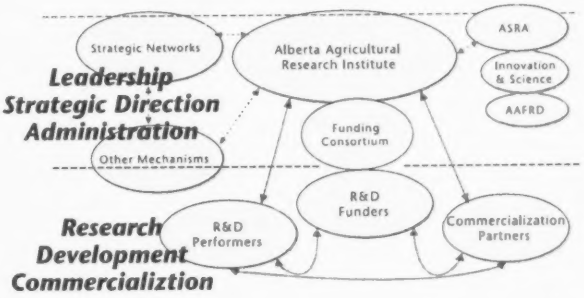
Economics, Marketing and Social Sciences

For these three priority areas to achieve success, leading-edge competitive intelligence processes to understand the opportunities and priorities as presented by the market and industry, and/or 'harvesting the world' strategies will be key. This also includes a focus on regulations, policy changes and marketing that support the above priorities. Other factors that need to be considered as part of the system include social sciences, rural sociology, consumer attitudes/rural attitudes and rural renewal.

Leadership and Governance

For the Alberta Agriculture Strategic Research and Innovation Framework to be successful, a new leadership and governance model will be implemented. The key shift, and foundation of this new governance model, is one that is innovative, collaborative and inclusive. **The priority is to accelerate the collaboration and strategic alignment emerging in the current system, and to expand new collaborative models among agriculture research funders and other stakeholders throughout the R&D continuum.** This model creates a strategic approach for research and funding capacity in Alberta, ensuring that the research and innovation needs required to drive our agricultural industry's future are identified (inclusively by stakeholders) and are met through strategic investment portfolios. **Key to the success of this framework will be accountability, due diligence, leadership and clearly defined outcomes.**

Figure 5 — **Agricultural Research & Innovation Governance Model**



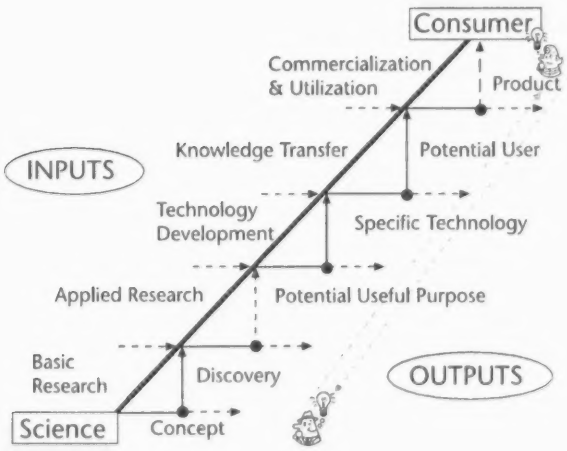
Implementing the new Research and Innovation Strategy on a foundation that is inclusionary and collaborative, is a key success factor to positioning Alberta as one of the world leaders in agriculture research and innovation. The Strategic Research and Innovation Networks, including industry, producers, performers, and other stakeholders, are responsible for identifying key opportunities and priorities for Alberta's agricultural industry. This process of information development and sharing, direction and priority identification will result in the alignment of capacity toward science and technology products and knowledge critical to achieving economic, social and environmental goals.

Strategic Networks are constituted of representatives from the full innovation continuum, from basic research through to technology transfer to the ultimate use of the knowledge, technology and/or products (see Figure 6). The Strategic Networks and other mechanisms as required will provide recommendations regarding the strategic direction and priorities. The Networks will include representation from stakeholder groups across the research and innovation continuum and are directly accountable to AARI. Three Strategic Research and Innovation Networks will be created and are listed below:

1) Value-Added Food and Health Products Strategic Network
2) Bio-Products Strategic Network
3) Sustainable Production Systems Strategic Network

Representatives on each Strategic Network will include industry — from producers through the value chain to the marketplace, NGOs, commodity organizations, Federal and Provincial governments, R&D and commercialization members and representatives from other sectors as necessary.

Figure 6 — **Alberta Agriculture Research and Innovation Continuum**



AARI and the Funding Consortium, in collaboration with stakeholders, will set the strategic agenda, establish the strategic priorities and ensure that investments are aligned with the strategic direction and facilitate the attraction of extra-provincial and industry resources to the strategic direction. AARI will work with the Agriculture Funding Consortium and other research funders to direct significant investment to the opportunities and priorities identified by the Strategic Networks. Competitive intelligence, scientific review and due diligence processes are key to this approach and accountability will be an on-going function of AARI, assisted as appropriate by the Funding Consortium. AARI will also recommend policy in support of the strategic direction, priorities and goals in the Strategic Research and Innovation Framework. Under this collaborative model, stakeholder consultation and input will continue to be an on-going priority for framework renewal and the overall R&D System Business Plan. Regular review (annual or biannual) of the roles, responsibilities, outputs and outcomes will use the Framework and System Business Plan as a basis for accountability.

Six public agriculture R&D funders [AARI (Alberta Agricultural Research Institute), ACIDF (Alberta Crop Industry Development Fund), ALIDF (Alberta Livestock Industry Development fund), DLFOA (Diversified Livestock Fund of Alberta), AVAC Ltd. and the AFC (Agriculture and Food Council)] have collaborated to form the Agricultural Funding Consortium. The Agricultural Funding Consortium will continue to evolve and expand to include other critical funders in the R&D continuum as the system is implemented including other Life Sciences, sectoral funders (AIF, AHMFR), and others. This Consortium directs funding towards specific strategic priorities, and through this governance model, increased system productivity, efficiency, investment, and accountability will result. **One of the greatest benefits the Funding Consortium brings is the ability to provide critical mass in supporting the Province's strategic research and innovation priorities, while simultaneously honouring the specific mandates of each individual funder.**

The Research Performers, Funding Consortium, and AARI will work together to create high quality scientific projects that are aligned with strategic priorities, and with Alberta's technology transfer/innovation/ commercialization capacity. A robust scientific and industry peer review process stewarded by AARI will examine proposals and select those that reflect the priorities and strategic direction, at the same time as focusing on specific outcomes.

One underlying principle of the entire system is scientific excellence, which will guide decisions about outcome driven research priorities and ideas. Research performers, including Universities and Colleges, the Alberta Research Council, Federal and Provincial government researchers and other external research performers, will focus their efforts on outcome driven research and scientific excellence. This focus on scientific excellence will help draw larger financial contributions to the strategic priorities from extra-provincial and industrial funders.

The ability for this new model to achieve the growth targets for 2010 and beyond will be highly dependent on innovative, value-added components of the economy, such as new crops and livestock products, new technologies and new knowledge. This will be accomplished through a system that links good science to industry needs and economic opportunities for the growth and sustainability of the agriculture and food system. For example, through this system innovations resulting from research and development efforts can quickly be utilized by farmers, processors, manufacturers, and other end users, to accelerate growth or meet new sustainability and/or social challenges from competitors or needs expressed by the public.

This new leadership and governance model, championed by AARI, will ensure that Alberta's research and innovation

system is aligned, has strong leadership and accountability for the Strategic Framework, is well resourced, provides for commercial opportunities and is well recognized locally, nationally, and globally.

Under this new model, linkages among the various stakeholders of the system will be more closely aligned, featuring more multi-disciplinary, cross-sectoral programs and projects, and more multi-institutional linkages. Through the process of aligning research, technology transfer and commercialization, the system encourages stakeholders to shop the world for applicable technologies, including those transferable from other jurisdictions and economic sectors.

Producer and industry associations, applied research associations, and other like-minded partners including ARC (Alberta Research Council), AAFRD, AAFC, OCCI (Olds College Centre For Innovation), IRAP (NRC-Industrial Research Assistance Program) and AESA (Alberta Environmentally Sustainable Agriculture) Program, will be encouraged and supported to build the collaboration necessary for innovation.

Figure 7 — **Participant and Stakeholder Roles, Responsibilities and Goals**

Who	AARI and Funding Consortium	Strategic Networks	Research Performers	Technology and Commercialization Players
Key Players	• AARI • Industry Development Funds • Ag and Food Council • AVAC Ltd. • Additional funders as necessary	• Industry (from producers to marketplace) • NGOs • Commodity/ Industry/Applied Research Organizations • Federal and Provincial Governments • R&D and Commercialization members • Other sectors as necessary	• Universities/ Colleges • ARC/NRC and other similar institutions • AAFRD • AAFC • OCCI • Private	• Agribusiness, Commodity/Industry/ Applied Research Organizations • Universities/Colleges • ARC/NRC and other similar institutions • AAFRD • AAFC • AVAC • Processors/ Manufacturers • Other Sectors
Roles & Resp.	• Strategic Direction and Priority Setting • Policy • Due Diligence Processes • Investment Portfolio and Leverage • Accountability processes • Framework and Business Plan Renewal • Balancing EMSE* priorities	• Environmental Scan • Global Networking • Proposal Building • Develop R&D partnerships • Identifying R&D Strategic Priorities and Outcomes	• Scientific Excellence • Basic and Outcome Driven Research • Innovation • Education and Training • Knowledge of Science Opportunities	• Technology Commercialization • Best Management Practices • Knowledge Transfer • Evaluation and Assessment of Technology and Products
Outputs	• AB Agricultural R&D Framework Business Plan (renewal) • Investment Portfolio • Attraction of Federal and Industry Funding • All Goals	• Opportunities and Priorities for the Agricultural Industry • Science Plans to deliver Priorities • Partnerships/ Team Building • Product and Technology • Goals 1, 3 and 4	• Goals 3, 4 and 6	• Goals 3, 4 and 6

*Environmental, Market, Social and Economic

This collaborative stakeholder approach increases the opportunities for commercial investment into Alberta new products, practices and processes, ensuring opportunities are not missed. Through collaborative efforts, capacity and capability for commercializing technology will be available. Support for creating business incubation capacity, and support for building expertise in technology commercialization including management of intellectual property, licensing and contracting skills and technology prospecting outside of Alberta will be available. The governance model ensures ongoing review and analysis of the best of models from elsewhere, and incorporating strategies that will strengthen the system to meet the growth objectives.

Key Critical Components of an Effective R&D System

To establish an effective R&D System, stakeholders identified the following critical components as essential:

- **Leadership, direction, and agreement on an R&D Strategic Framework.**
- **Enhanced collaboration and partnerships throughout the R&D System.**
- **Alignment of R&D System with industry goals and needs.**
- **Advanced human resource capacity aligned with strategic direction and outcomes/priorities.**
- **Strategies and actions that address the needs of the full R&D System.**
- **Increased public and private investment over the long term.**
- **Public/private mechanisms for action, i.e., networks, teams, organizations.**
- **Public sector funding for priorities and private sector funding for commercialization.**
- **Effective communication with other global knowledge providers relative to our strategic priorities.**
- **Accountability for goals, outputs and outcomes**

Under the strategic leadership of AARI and the Funding Consortium, these key critical components will be incorporated into the system, ensuring the system productivity through the continuum will be timely, efficient and seamless. **The guiding principles for strategic investment in this system are building a critical mass of world-class scientific personnel in disciplines critical to Alberta's unique needs, supporting it with appropriate levels of research program funding utilizing talents as the engine for innovation, and ensuring discoveries are supported with technology commercialization expertise and industry partnerships. Building research excellence with a collaborative spirit global networks and links with entrepreneurial skills are the essential ingredients for success.**

Accountability

As a systems model, accountability and due diligence will prevail throughout the continuum including the priorities, goals, strategies and resources within this Framework. Achieving success depends on due diligence and accountability through concept, innovation, applied research, technology development, commercialization and market entry, and ultimately the creation of value for final consumers and end users.

Through the process of implementing this Framework and the resultant Business Plan, **the new governance structure will establish specific accountability for both the long and short term.** The governance structure is accountable for all goals and to achieving maximum private and public benefits. This Strategic Research and Innovation Framework serves all stakeholders whose individual business plans will create the outcomes identified.

AARI is accountable for effective use of resources and building quality research capacities to achieve the outcomes targeted by this Framework. Due diligence and accountability will be built into policy and strategic direction, and investment portfolios. Proposals selected to receive funding, will reflect the priorities and strategic direction and specific outcomes of the strategic framework. **Quality scientific, technology transfer and commercialization proposals will be built in an atmosphere of due diligence, selective investment portfolios, collaborative science and clear strategic priorities.**

Stakeholders under this governance structure are accountable to ensure all initiatives balance economic, market, social and environmental priorities. Consumers and end users will look to the governance structure for accountability in the products, innovations and services introduced to the market.

AARI, together with individual stakeholders and investors including the Funding Consortium, are accountable for implementation and financial management of initiatives and outcomes. To evaluate the performance and outcomes, a variety of indicators or measures can be applied and will need to be established in the early implementation stage. These may include factors such as, number of contracts, total investment attraction, total new investment, number and diversity of products and innovations commercialized, number adopted by the marketplace, success of technology transfer and commercialization activities, overall financial performance and others, often validated by arm's length agencies.

Outcomes

The Alberta Agriculture Strategic Research and Innovation Framework establishes the foundation for the industry's growth to 2008 and beyond. This strategy will create the capacity to develop a stream of products and innovations necessary to achieve growth targets. The goals, strategies and actions established for this Strategic Research and Innovation Framework will be implemented through the leadership and governance of AARI.

In the first five years of implementation of the Agriculture Strategic Research and Innovation Framework, and as a direct result of the strategic investment, the following outcomes will serve as a base for accountability:

- **Attract $272 million in private investment to commercialize technologies created and enabled by the System**
- **Leverage $234.5 million in federal and international funding through existing and new agencies and programs focused on science and innovation**
- **Attract and establish nationally and internationally recognized scientific leaders in priority life sciences areas**
- **Attract and train over 300 new highly qualified personnel for Alberta's life sciences research and innovation system (grad students, technicians, knowledge workers, business managers, etc.)**
- **Create 125 new products/processes and attract 70 new companies, utilizing intellectual property generated by the system**

For the R&D system to move forward and effectively convert R&D to commercializable products, innovation and knowledge utilization, the governance model identified must be adopted immediately. Research performers will actively seek benefit from alignment with commercial partners, at the same time that commercial partners will actively seek benefit from Alberta's research performing capacity. New and enabling capacity will be created through collaboration, partnerships, and new investment.

Under the leadership AARI and the Funding Consortium, resources will be focused on priority areas, and R&D priorities will be aligned with industry and public needs. Focusing on strategic priorities will provide clear direction for building human resources, infrastructure and innovation capacity. New financial resources and R&D personnel will be attracted to Alberta, and additional highly qualified personnel will be working in the Alberta Agricultural R&D System by 2005.

Accountability and due diligence are two of the principles underlying this new governance model, and will be utilized to ensure excellence and maximum return on investment across the system at every stage of research and technology development. Increased system productivity and efficiency builds the business case for investment. All R&D system participants, including stakeholders, shareholders, research performers, investors and the public will be more engaged and knowledgeable about the system. Stakeholders will strengthen their commitment to the shared vision and to achieving the strategic outcomes. This will result in enhanced public trust in Alberta's Agricultural R&D System.

R&D efforts will intersect with other related plans and strategic initiatives in Alberta. This will ensure that Alberta's Agricultural R&D System is aligned, has strong leadership and accountability, is well resourced, provides for commercial opportunities and is well recognized locally, nationally and globally. These initiatives will drive an industry based on sustainable growth and an industry that balances economic, market, social and environmental priorities.

While collaboration is key, the new governance model challenges stakeholders and organizations to develop and to implement their individual business plans within this overall provincial framework. The Alberta Agriculture Research and Innovation Strategy will provide the leadership and mechanism, for success and governance will remain the responsibility of all collaborators. However, individual organizational business plans will, where needed, be aligned with and complementary to the overall research and innovation framework. This is a necessary accountability to achieve growth targets and to maximize wealth creation opportunities in a sustainable manner.

Implementation

The new governance model will implement this Framework. Implementation is based on a portfolio investment approach across the innovation continuum, from basic discovery research to successful technology commercialization, delivering products to consumers, driving product sales and economic growth.

Throughout the continuum, from research concept through to final consumer benefit, this model will ensure all initiatives balance economic, market, social and environmental priorities. Achieving success is about capturing growth opportunities through strategic investment portfolios to help Alberta develop a leadership position in agriculture research and innovation by 2010 and beyond.

Immediate steps for moving forward include:

- Adopting and implementing the new governance model
- Moving from the Framework to a Business Plan and its implementation
- Engaging Strategic Networks to finalize the science plans necessary to deliver on the Strategic Priorities
- Utilizing the Framework to guide 2003 and beyond research and development investments (current and new)
- Linking with Alberta's Life Sciences Strategy to ensure this Framework's priorities are met
- Initiating the strategies and actions in support of the goals

Supporting Documents

Will be posted at **www.aari.ab.ca** in March, 2003.

Bibliography (for ARIF)

Kaleidoscope Consulting. *Accelerating Sustainable Growth Through Research and Development.* Nisku, Alberta:Alberta Agricultural Research Institute, 2000.

Serecon Management Consulting Inc., Toma & Bouma

Management Consultants, S.J. Campbell Investments Ltd.

Alberta's Agriculture and Food Research & Development & Technology Transfer System: Benchmark Document 2001. Edmonton, Alberta: Alberta Agricultural Research Institute, 2001.

Alberta Agricultural Research Institute. *A Strategic Business Plan 2002/2003 to 2004/2005.* Edmonton, Alberta: Alberta Agricultural Research Institute, 2001.

Serecon Management Consulting Inc., Toma & Bouma Management Consultants, S.J. Campbell Investments Ltd. *Alberta's Agriculture, Food and Bio-Products Research & Development and Technology Transfer System: Millennium Strategy (2002 Blueprint).* Edmonton, Alberta: Alberta Agricultural Research Institute, 2001.

K.K. Klein, J.E. Hobbs. *Socio-Economic Impacts of Selected Research Projects in AARI Matching Grants Program: A Summary.* Alberta Agricultural Research Institute, 1997.

Harnessing Science for Industry Growth. Power Point Presentation. Edmonton, Aberta: Alberta Agricultural Research Institute & Alberta Agriculture, Food & Rural Development, 2002.

List of Acronyms Used in **Growing Alberta's Food Industry Together**

AAFRD — Alberta Agriculture, Food and Rural Development

website: www1.agric.gov.ab.ca/

AAMDC — Alberta Association of Municipal Districts and Counties — an association of municipal districts and counties in Alberta to assist them in achieving effective and strong local governments, web site **www.aamdc.com/**

AARI — Alberta Agricultural Research Institute — the primary agency in Alberta for funding, coordinating and promoting strategic agricultural research initiatives and technology transfer in the agriculture and food sector, website: **www.aari.ab.ca/**

ACE — Alberta Centre of Entrepreneurial Action Team

The Ag Summit Action Team that resulted from a merger between Global Market Development and Building and Innovative, Entrepreneurial Learning Culture, Report at **www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/webdoc6547**

ACIDF — Alberta Crop Industry Development Fund

ACIDF is an independent, not-for-profit company operating under the direction of the crop industry. It funds and supports selected crop related industry development activities, which include market development, research, and extension.

website: **www.acidf.ca/**

ACLWRP — Alberta-Canada Livestock Welfare Research Partnership

A partnership between the federal and provincial governments and the livestock industry to support research in livestock welfare. Information at: **www.afac.ab.ca/Research/ACLWRP.htm**

AED — Alberta Economic Development

Website: **www.alberta-canada.com/aed/**

AEDA — Alberta Economic Development Authority

The Alberta Economic Development Authority [AEDA] is a partnership that provides businesses with a direct working link to the Alberta Government.

Website: **www.edt.gov.ab.ca/aeda/about.cfm**

AESA — Alberta Environmentally Sustainable Agriculture (Council & Program)

The AESA Program is a long-term, provincially funded program to facilitate the continued development and adoption of management practices and technologies that make agricultural production and processing more environmentally sustainable.

Website: **www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/aesa6422?opendocument**

AFAC — Alberta Farm Animal Care Association

AFAC is a voluntary industry association. Its goal is to improve animal handling and promote responsible animal care.

Website: **www.afac.ab.ca/index.htm**

AFC — Agriculture and Food Council

AFC's mission is to be a Catalyst supporting the Alberta agriculture, food and life sciences industry in growth, competitiveness, profitability and sustainability, enabling industry members to engage one another, their stakeholders, markets, consumers, governments and the public. Website: **www.agfoodcouncil.com/**

AFPA — Alberta Food Processors Association

AFPA is a non-profit organization representing all segments of the food and beverage industry. Its mission is to build the capacity and thereby competitive advantage of its members to meet customer needs by providing members superior programs and services. Website: **www.afpa.com/**

AFSC — Agriculture Financial Service Corporation.

AFSC is a provincial crown corporation with a private sector Board of Directors that provides farmers, agribusinesses and other small businesses loans, crop insurance and farm income disaster assistance. Website: **www.afsc.ca/**

AHRE — Alberta Human Resources & Employment

Website: **www3.gov.ab.ca/hre/**

AHW — Alberta Health & Wellness

Website: **www.health.gov.ab.ca/**

AIC — Agricultural Institute of Canada

AIC is active in serving the agricultural community, playing a central role as a source of credible information and comment for the Canadian agriculture and agri-food sector. Website: **http://www.aic.ca/**

AIMFAR — Alberta's Information Management Framework of Agricultural Regions — a land planning tool

AIMS 2003 — Alberta's International Marketing Strategy 2003: Targeting Tomorrow

AL — Alberta Learning

website: **www.learning.gov.ab.ca/**

ALIDF — Alberta Livestock Industry Development Fund

ALIDF was initiated in 2001 to fund projects that contribute to an environmentally and socially responsive livestock industry in Alberta. It is part of the Agricultural Funding Consortium. Website: **www.alidf.ca/**

ALIS — Alberta Learning Information Service

ALIS is Alberta's on-line gateway for career, learning and employment information and services. Website **www.alis.gov.ab.ca**

ALPS — Alberta Livestock Protection System —

ALPS is a partnership among AAFRD, AFAC, and the Alberta SPCA to promote responsible and humane care of livestock in Alberta

AMWWP — Alberta Municipal Water/Wastewater Program

APF — Agriculture Policy Framework

The APF is a federal-provincial-territorial agreement that set the governments' policy for the agri-food industry. Under APF Alberta and Canada signed a five-year implementation agreement in June of 2003 that defines priority areas and funding for them. The priority areas are: business risk management, food safety and quality, science and innovation, the environment and renewal.

Website: **http://www.agr.gc.ca/cb/apf/index_e.php**

ARC — Alberta Research Council

The Alberta Research Council Inc. develops and commercializes technologies to give clients a competitive advantage. ARC provides solutions to the energy, life sciences, agriculture, environment, forestry and manufacturing sectors. Website: **www.arc.ab.ca**

ARIF — Alberta's Agriculture Research and Innovation Strategic Framework

ARIF is a framework that defines the goals, funding, leadership and governance, Accountability, outcomes and implementation for Alberta's agri-food research system.

Website: **www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/webdoc6369?OpenDocument**

ASRA — Alberta Science and Research Authority

ASRA is an independent board of members from Alberta's academic, business and research communities, appointed by provincial Cabinet. ASRA was established to maximize the effectiveness of science and research as an integral component to the success of the province in the global economy.

Website: **www.asra.gov.ab.ca/**

ATOT — Action Team on Taxation

ATOT was one of the 12 Action Teams in the Ag Summit process. Report website:

http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/webdoc6547?OpenDocument

AUMA — Alberta Urban Municipalities Association

AUMA provides leadership in advocating local government interests to the provincial government and other organizations, and will provide services that address the needs of its membership.

Website: **http://www.munilink.net/noflash.htm**

AVAC Ltd.

AVAC Ltd. is a not-for-profit, private company dedicated to nurturing and developing value-added agriculture in Alberta. Website: **http://www.avacltd.com/**

CAFTA — Canadian Agri-Food Trade Alliance

The Canadian Agri-Food Trade Alliance is a coalition of national and regional organizations, associations and companies that have come together in support of a more open and fair international trading environment for agriculture and agri-food.

Website: **http://www.cafta.org**

CAIT — Centre for Agri-Industrial Technology

The Centre for Agri-Industrial Technology's key role is to help develop the non-food processing industry in Alberta.

Website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cait5013?OpenDocument**

CAPIFS — Canada Alberta Partners in Food Safety — AAFRD, AHW, CFIA, and Health Canada

CARD — Canadian Adaptation and Rural Development (Fund)

Started in 1995, the $60 million-per-year CARD fund is the Government of Canada's initiative to foster the increased long-term growth, empioyment and competitiveness of Canada's agricultural and agri-food industry and agricultural rural areas. In Alberta the CARD fund is managed by the Agriculture and Food Council.

Website: **http://www.agr.gc.ca/policy/adapt/index_e.phtml**

CCGD — Canadian Council of Grocery Distributors

The Canadian Council of Grocery Distributors is the leading association representing the grocery and foodservice distribution industries, Canada's second largest commercial sector. Website: **http://www.ccda.ca/**

CFA — Canadian Federation of Agriculture

The CFA was formed in 1935 to answer the need for a unified voice to speak on behalf of Canadian farmers. It continues today as a farmer-funded, national umbrella organization representing provincial general farm organizations and national commodity groups. Website: **http://www.cfa-fca.ca/**

CFBMC — Canadian Farm Business Management Council

The Canadian Farm Business Management Council (CFBMC) is the only national organization in Canada devoted exclusively to developing and distributing advanced farm management information.

Website: **http://farmcentre.com/english/aboutus/about_council.htm**

CFIA — Canadian Food Inspection Agency

The creation of the Canadian Food Inspection Agency (CFIA), in April 1997, brought together inspection and related services previously provided through the activities of four federal government departments — Agriculture and Agri-Food Canada, Fisheries and Oceans Canada, Health Canada and Industry Canada.

Website: **http://www.inspection.gc.ca/**

CFIP — Canadian Farm Income Program

The Canadian Farm Income Program (CFIP) is a national program designed to target assistance to Canadian producers who have experienced a sudden and severe drop in farming income for reasons beyond their control. The program was in place for the 2000, 2001 and 2002 tax years.

Website: **http://www.agr.gc.ca/policy/income/cfip/welcome.html**

CFISIG — Canadian Food Inspection System Implementation Group

CFO — Confined Feeding Operation

Under Alberta's Agricultural Operations Practices Act, a confined feeding operation means "an activity on land that is fenced or enclosed or within buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing, but does not include seasonal feeding and bedding sites."

Website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts4186?OpenDocument#definitions**

CIFST — Canadian Institute of Food Science and Technology

Founded in 1951, CIFST is the national association for food industry professionals. Its membership of more than 1500 is comprised of scientists and technologists in industry, government and academia who are committed to advancing food science and technology.

Website: **http://www.cifst.ca/**

CLA — Conjugated Linoleic Acid (Initiative)

COFFSP — Canadian On-Farm Food Safety Program

CSCFSC — Canadian Supply Chain Food Safety Coalition — players in the food continuum, sponsored by the Canadian Council of Grocery Distributors (see CCGD)

CTA — Canada Transportation Act

The new Act, which was first introduced on June 20, 1995, in the House of Commons, is designed to modernize and streamline rail regulation, promote the formation of short-line railways, ensure that shippers continue to have access to competitive transportation services, eliminate unnecessary regulation in other modes of transport, and place greater emphasis on commercial decision-making in the transport sector.

Website: **http://www.tc.gc.ca/mediaroom/releases/nat/1996/96_h098E.HTM**

CWB — Canadian Wheat Board

The Canadian Wheat Board, is the marketing agency for over 85,000 farmers who grow wheat, durum wheat and barley in Western Canada. Our role is to market these grains for the best possible price both within Canada and around the world.

Website: **http://www.cwb.ca/en/index.jsp**

DEC — District Export Council (Model)

District Export Councils (DECs) are organizations of leaders from the local business community, appointed by successive (US) Secretaries of Commerce, whose knowledge of international business provides a source of professional advice for local firms.

Website: **http://www.usatrade.gov/website/website.nsf/WebBySubj/Main_DistrictExportCouncils**

DLOFA — Diversified Livestock Fund of Alberta

EGS — Environmental Goods and Services

ENV — Alberta Environement

Website: **www3.gov.ab.ca/env/**

ESAT — Environmental Stewardship Action Team

The Action Team that developed recommendations to enhance environmental stewardship. Report website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/webdoc6547?OpenDocument**

ESL — English as a Second Language

EUA — Electric Utilities Act

Website: **http://www.qp.gov.ab.ca/document_print.cfm**

EUB — Alberta Energy and Utilities Board

The Alberta Energy and Utilities Board (EUB) is an independent, quasi-judicial agency of the Government of Alberta. Its mission is to ensure that the discovery, development, and delivery of Alberta's resources take place in a manner that is fair, responsible, and in the public interest.

Website: **http://www.eub.gov.ab.ca/**

FPDC — Food Processing Development Centre

The Food Processing Development Centre is a modern, fully equipped pilot plant and product development laboratory facility. Centre services are designed to strengthen and expand the capability of Alberta's food processors to meet the challenges of the marketplace through application of new technology and the development of new or improved products and processes.

Website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/fpdc5012?opendocument**

FPTAFIC — Federal/Provincial/Territorial Agri-Food Inspection Committee

FSIL — Food Safety Information Line

A toll-free telephone service ready to answer consumer questions and concerns about home food safety. 1-800-892-8333

Website: **http://www.foodsafetyline.org/**

G-7 — Group of Seven

HACCP — Hazard Analysis Critical Control Points

Hazard Analysis Critical Control Point is an effective and rational means of assuring food safety from harvest to consumption.

Website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs4338?opendocument**

HRDC — Human Resources Development Canada

On December 12, 2003, the Prime Minister announced a new federal cabinet structure. In support of the new structure, the Department of Human Resources Development Canada was divided into two new entities: the Department of Social Development and the Department of Human Resources and Skills Development.

Website: **http://www.hrdc-drhc.gc.ca/common/home.shtml**

IAMF — Innovation in Agribusiness Management Fund

The Innovation in Agribusiness Management Fund (IAMF) supports initiatives that can be categorized under the three key objectives of the IAMF program: human resource management, risk management tools and assessment, and succession and transition initiatives. The overall goal of the IAMF program is to support Alberta producers in developing innovative, new ideas and tools to assist their businesses.

Website: **http://www.agfoodcouncil.com/serve/iamf.shtml**

ICAP — Infrastructure Canada Alberta Program

IDS — Industry Development Sector of AAFRD

IDS includes six divisions devoted to business and innovation, processing development, agri-food investment, ag-entrepreneurship, crop diversification and livestock development. These services will be delivered through a network of 18 hub offices and 16 offices co-located with industry partners, as well as 24 points of access and a toll free information line **1-866-882-7677**

IFAASA — Institute for Food, Agri-Industrial and Agricultural Sciences, Alberta

A collaboration among AAFRD, the U of A, and ARC for the delivery of agriculture, agri-food and agri-industrial sciences in the areas of basic and applied research, commercialization of products and learning centres

IIAAT — Image and Importance of Agriculture Action Team

Ag Summit Action Team. Their report is listed at: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/webdoc6547?OpenDocument**

ILWG — Intensive Livestock Working Group

An alliance of Alberta livestock organizations that serves as a forum for sharing information and dealing with common issues that face Alberta livestock producers

LSVCC — Labour Sponsored Venture Capital Corporations

LUCAT — Land Use Core Action Team

Ag Summit Action Team. Their report is listed at: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/webdoc6547?OpenDocument**

MA — Alberta Municipal Affairs

Website: **www3.gov.ab.ca/ma/**

MLA — Member of the Legislative Assembly

The elected members of the provincial government.
Website: **http://www.assembly.ab.ca/**

MOU — Memorandum of Understanding

NCC — Nature Conservancy of Canada — a charity to conserve ecologically significant areas

Website: **www.natureconservancy.ca**

NGC — New Generation Coopertatives

A New Generation Co-op (NGC) is a form of business arrangement that encourages agricultural producers and processors to expand the scope of their businesses.

Website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa6646?opendocument#1**

NISA — Net Income Stabilization Account

This was a Federal Government program intended to provide farmers with a savings mechanism that can be triggered in years when farm income falls below a three-year average. NISA was replaced by the Canadian Agricultural Income Stabilization (CAIS) Program starting with the 2003 taxation year.

PNP — Provincial Nominee Program

The Alberta Provincial Nominee Program (PNP) is an employer-driven immigration program operated by the Government of Alberta, in conjunction with Citizenship and Immigration Canada (CIC).

Website: **http://www.alberta-canada.com/pnp/**

R & D — Research & Development

REDA — Rural Education and Development Association

REDA is a non-profit educational organization serving agricultural organizations, co-operatives and credit unions in Alberta since 1959. Working together with the support of our member organizations and our affiliations, REDA has become a recognized source of expertise and services throughout the province.

Website: **http://www.compusmart.ab.ca/ruraled/**

RRSP — Registered Retirement Savings Plan

SPC — Standing Policy Committee The Alberta government's decision-making process centers around its Standing Policy Committees, introduced in 1992. There are six permanent committees which review and make recommendations on policies, programs and legislation. Website: **http://www.pao.gov.ab.ca/infocentre/government/govt-works/how-govt-works.htm**
SRD — Alberta Sustainable Resource Development Website: **www3.gov.ab.ca/srd/**
STEP — Summer Temporary Employment Programs Programs that are designed to get young people into the agri-food industry work force. In 2003 they were the Veterinary Work Experience Program, Summer Farm Employment Program and the Agricultural Processing Industry Employment Program. Website: **http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/aet6525?opendocument**
TFWP — Temporary Foreign Worker Program A subset of the Provincial Nominee Program (see PNP) Website: **http://www.alberta-canada.com/pnp/**
YAP — Youth Apprenticeship Learning Opportunities Project